To what extent do terrorist attacks affect public sentiment surrounding immigration and refugee policy? A case study of the Stockholm terrorist attack, April 2017.

AUTHOR
Alexandra Salo, Computational Social Science,
Universidad Carlos III de Madrid

Loading the libraries

```
library(readr)
library(tidyr)
library(dplyr)
library(lubridate)
library(ggplot2)
library(DataExplorer)
library(cobalt)
library(sandwich)
library(lmtest)
library(tableone)
library(Matching )
library(stats)
library(broom)
library(ggplot2)
library(flextable)
library(officer)
library(MatchIt)
library(car)
```

Loading the data

```
big_data <- read_csv("R_TFM/ESS8e02_3.csv")
timing_data_unformatted <- read_csv("R_TFM/ESS8TIMEe01.csv")
```

Cleaning the data

```
# Select only the necessary variables from the second dataset
timing_data <- timing_data_unformatted |>
  dplyr::select(idno, inwdds, inwmms, inwyys, inwshh, inwsmm) |>
  filter(inwyys != 9999)

# Combine the date and time variables into a single datetime variable
timing_data <- timing_data |>
  mutate(interview_datetime = make_datetime(inwyys, inwmms, inwdds))

# Remove the original date and time variables
```

```r
timing_data <- timing_data |>
  dplyr::select(idno, interview_datetime)

# Merge the datasets by 'idno'
merged_data <- merge(big_data, timing_data, by = "idno")

# Display the first few rows of the merged data
head(merged_data)
summary(merged_data)

# List of covariates to keep from the merged dataset
covariates <- c("idno", "cntry", "interview_datetime", "nwspol", "netusoft", "trstplc"

# Select only the necessary variables
cleaned_data <- merged_data %>% dplyr::select(covariates)

# Factorize the variables that need factorizing
cleaned_data$cntry <- factor(cleaned_data$cntry)
cleaned_data$gndr <- factor(cleaned_data$gndr)
cleaned_data$region <- factor(cleaned_data$region)
cleaned_data$prtvtbse <- factor(cleaned_data$prtvtbse)

# Handle special codes and replace with NA
special_codes <- list(
  nwspol = c(7777, 8888, 9999),
  netusoft = c(7, 8, 9),
  trstplc = c(77, 88, 99),
  prtvtbse = c(66, 77, 88, 99),
  imdfetn = c(7, 8, 9),
  impcntr = c(7, 8, 9),
  imbgeco = c(77, 88, 99),
  imwbcnt = c(77, 88, 99),
  rlgblg = c(66, 77, 99),
  rlgdgr = c(77, 88, 99),
  gvrfgap = c(7, 8, 9),
  rfgfrpc = c(7, 8, 9),
  rfgbfml = c(7, 8, 9),
  gndr = 9,
  agea = 999,
  eisced = c(77, 88, 99),
  hinctnta = c(77, 88, 99)
)

# Replace special codes with NA
df_allNA <- cleaned_data %>%
  mutate(across(
    names(special_codes),
    ~ case_when(
      . %in% special_codes[[cur_column()]] ~ NA_real_,
      TRUE ~ as.numeric(.)
    )
  ))

summary(df_allNA)
```

```
swedish_data <- df_allNA |>
  filter(cntry == "SE")

# Define the date of the terrorist attack
swedish_attack_date <- as.Date("2017-04-7")

# Create a centered time variable and treatment variable
swedish_data <- swedish_data |>
  mutate(time_centered = as.numeric(difftime(interview_datetime, swedish_attack_date,
  mutate(treatment = ifelse(time_centered >= 0, TRUE, FALSE)) |>
  drop_na()

summary(swedish_data)
```

Descriptive analysis and balance tests

```
# Summary statistics of key variables
summary(swedish_data)
```

```
     idno          cntry      interview_datetime
Min.   :  10   SE     :9230   Min.   :2016-08-22 00:00:00.00
1st Qu.: 731   AT     :   0   1st Qu.:2016-10-25 00:00:00.00
Median :1323   BE     :   0   Median :2016-12-03 00:00:00.00
Mean   :1470   CH     :   0   Mean   :2017-01-24 08:09:06.04
3rd Qu.:2163   CZ     :   0   3rd Qu.:2017-03-07 00:00:00.00
Max.   :3514   DE     :   0   Max.   :2017-12-28 00:00:00.00
               (Other):   0
    nwspol           netusoft        trstplc          prtvtbse
Min.   :   0.00   Min.   :1.000   Min.   : 0.000   Min.   : 1.000
1st Qu.:  30.00   1st Qu.:5.000   1st Qu.: 6.000   1st Qu.: 5.000
Median :  60.00   Median :5.000   Median : 7.000   Median : 6.000
Mean   :  74.86   Mean   :4.487   Mean   : 6.695   Mean   : 5.435
3rd Qu.:  90.00   3rd Qu.:5.000   3rd Qu.: 8.000   3rd Qu.: 6.000
Max.   :1410.00   Max.   :5.000   Max.   :10.000   Max.   :11.000

   imdfetn         impcntr         imbgeco          imwbcnt
Min.   :1.000   Min.   :1.000   Min.   : 0.000   Min.   : 0.000
1st Qu.:1.000   1st Qu.:1.000   1st Qu.: 5.000   1st Qu.: 5.000
Median :2.000   Median :2.000   Median : 6.000   Median : 7.000
Mean   :1.721   Mean   :1.805   Mean   : 5.807   Mean   : 6.287
3rd Qu.:2.000   3rd Qu.:2.000   3rd Qu.: 7.000   3rd Qu.: 8.000
Max.   :4.000   Max.   :4.000   Max.   :10.000   Max.   :10.000

    rlgblg          rlgdgr          gvrfgap        rfgfrpc
Min.   :1.000   Min.   : 0.000   Min.   :1.00   Min.   :1.000
1st Qu.:1.000   1st Qu.: 0.000   1st Qu.:2.00   1st Qu.:3.000
Median :2.000   Median : 2.000   Median :3.00   Median :3.000
Mean   :1.628   Mean   : 2.992   Mean   :2.59   Mean   :3.327
3rd Qu.:2.000   3rd Qu.: 5.000   3rd Qu.:3.00   3rd Qu.:4.000
Max.   :2.000   Max.   :10.000   Max.   :5.00   Max.   :5.000
```

```
    rfgbfml           gndr            agea           eisced      
 Min.   :1.000   Min.   :1.000   Min.   :20.00   Min.   : 1.000  
 1st Qu.:2.000   1st Qu.:1.000   1st Qu.:42.00   1st Qu.: 3.000  
 Median :2.000   Median :1.000   Median :56.00   Median : 5.000  
 Mean   :2.602   Mean   :1.484   Mean   :55.09   Mean   : 4.546  
 3rd Qu.:3.000   3rd Qu.:2.000   3rd Qu.:68.00   3rd Qu.: 6.000  
 Max.   :5.000   Max.   :2.000   Max.   :90.00   Max.   :55.000  

     uempla           hinctnta          region     time_centered    
 Min.   :0.00000   Min.   : 1.000   SE110  :1757   Min.   :-228.00  
 1st Qu.:0.00000   1st Qu.: 4.000   SE224  :1524   1st Qu.:-164.00  
 Median :0.00000   Median : 7.000   SE214  :1220   Median :-125.00  
 Mean   :0.01625   Mean   : 6.465   SE123  : 502   Mean   : -72.66  
 3rd Qu.:0.00000   3rd Qu.: 9.000   SE331  : 373   3rd Qu.: -31.00  
 Max.   :1.00000   Max.   :10.000   SE321  : 345   Max.   : 265.00  
                                    (Other):3509                    
 treatment      
 Mode :logical  
 FALSE:7283     
 TRUE :1947     
```

```
DataExplorer::create_report(swedish_data)
```

```
processing file: report.rmd

1/42
2/42 [global_options]
3/42
4/42 [introduce]
5/42
6/42 [plot_intro]

7/42
8/42 [data_structure]
9/42
10/42 [missing_profile]

11/42
12/42 [univariate_distribution_header]
13/42
14/42 [plot_histogram]

15/42
16/42 [plot_density]
17/42
18/42 [plot_frequency_bar]
```

```
19/42
20/42 [plot_response_bar]
21/42
22/42 [plot_with_bar]
23/42
24/42 [plot_normal_qq]

25/42
26/42 [plot_response_qq]
27/42
28/42 [plot_by_qq]
29/42
30/42 [correlation_analysis]

31/42
32/42 [principal_component_analysis]

33/42
34/42 [bivariate_distribution_header]
35/42
36/42 [plot_response_boxplot]
37/42
38/42 [plot_by_boxplot]
39/42
40/42 [plot_response_scatterplot]
41/42
42/42 [plot_by_scatterplot]

output file: /Users/alexandrasalo/Desktop/UC3M TFM/report.knit.md

/Applications/RStudio.app/Contents/Resources/app/quarto/bin/tools/pandoc +RTS -K512m -
RTS '/Users/alexandrasalo/Desktop/UC3M TFM/report.knit.md' --to html4 --from
markdown+autolink_bare_uris+tex_math_single_backslash --output pandocb12f5f934884.html
--lua-filter /Library/Frameworks/R.framework/Versions/4.3-
x86_64/Resources/library/rmarkdown/rmarkdown/lua/pagebreak.lua --lua-filter
/Library/Frameworks/R.framework/Versions/4.3-
x86_64/Resources/library/rmarkdown/rmarkdown/lua/latex-div.lua --embed-resources --
standalone --variable bs3=TRUE --section-divs --table-of-contents --toc-depth 6 --
template /Library/Frameworks/R.framework/Versions/4.3-
x86_64/Resources/library/rmarkdown/rmd/h/default.html --no-highlight --variable
highlightjs=1 --variable theme=yeti --mathjax --variable 'mathjax-
url=https://mathjax.rstudio.com/latest/MathJax.js?config=TeX-AMS-MML_HTMLorMML' --
include-in-header
/var/folders/8y/722shxnx3sj3sw4sdp_w7z400000gn/T//Rtmpk7Sfbu/rmarkdown-
strb12f71797f47.html


Output created: report.html
```

```r
# Balance checks of the data pre and post attack
pre_attack <- swedish_data |>  filter(time_centered < 0)
post_attack <- swedish_data |>  filter(time_centered >= 0)
```

```
# Summary statistics for covariates before and after the event
summary(pre_attack)
```

```
     idno          cntry      interview_datetime
Min.   :  10   SE     :7283   Min.   :2016-08-22 00:00:00.0
1st Qu.: 747   AT     :   0   1st Qu.:2016-10-14 00:00:00.0
Median :1338   BE     :   0   Median :2016-11-16 00:00:00.0
Mean   :1493   CH     :   0   Mean   :2016-11-27 00:13:26.7
3rd Qu.:2247   CZ     :   0   3rd Qu.:2017-01-13 00:00:00.0
Max.   :3514   DE     :   0   Max.   :2017-04-06 00:00:00.0
               (Other):   0
    nwspol           netusoft        trstplc          prtvtbse
Min.   :   0.00   Min.   :1.000   Min.   : 0.000   Min.   : 1.000
1st Qu.:  30.00   1st Qu.:5.000   1st Qu.: 6.000   1st Qu.: 5.000
Median :  60.00   Median :5.000   Median : 7.000   Median : 6.000
Mean   :  74.44   Mean   :4.494   Mean   : 6.696   Mean   : 5.454
3rd Qu.:  90.00   3rd Qu.:5.000   3rd Qu.: 8.000   3rd Qu.: 6.000
Max.   :1410.00   Max.   :5.000   Max.   :10.000   Max.   :11.000

   imdfetn        impcntr         imbgeco          imwbcnt
Min.   :1.00   Min.   :1.000   Min.   : 0.000   Min.   : 0.000
1st Qu.:1.00   1st Qu.:1.000   1st Qu.: 5.000   1st Qu.: 5.000
Median :2.00   Median :2.000   Median : 6.000   Median : 7.000
Mean   :1.72   Mean   :1.804   Mean   : 5.811   Mean   : 6.291
3rd Qu.:2.00   3rd Qu.:2.000   3rd Qu.: 7.000   3rd Qu.: 8.000
Max.   :4.00   Max.   :4.000   Max.   :10.000   Max.   :10.000

    rlgblg          rlgdgr          gvrfgap         rfgfrpc
Min.   :1.000   Min.   : 0.000   Min.   :1.000   Min.   :1.000
1st Qu.:1.000   1st Qu.: 0.000   1st Qu.:2.000   1st Qu.:3.000
Median :2.000   Median : 2.000   Median :3.000   Median :3.000
Mean   :1.632   Mean   : 2.969   Mean   :2.594   Mean   :3.328
3rd Qu.:2.000   3rd Qu.: 5.000   3rd Qu.:3.000   3rd Qu.:4.000
Max.   :2.000   Max.   :10.000   Max.   :5.000   Max.   :5.000

   rfgbfml          gndr            agea          eisced
Min.   :1.000   Min.   :1.000   Min.   :20.00   Min.   : 1.000
1st Qu.:2.000   1st Qu.:1.000   1st Qu.:41.00   1st Qu.: 3.000
Median :2.000   Median :1.000   Median :56.00   Median : 5.000
Mean   :2.599   Mean   :1.482   Mean   :54.68   Mean   : 4.544
3rd Qu.:3.000   3rd Qu.:2.000   3rd Qu.:68.00   3rd Qu.: 6.000
Max.   :5.000   Max.   :2.000   Max.   :90.00   Max.   :55.000

    uempla          hinctnta          region     time_centered
Min.   :0.00000   Min.   : 1.000   SE110  :1374   Min.   :-228
1st Qu.:0.00000   1st Qu.: 4.000   SE224  :1200   1st Qu.:-175
Median :0.00000   Median : 7.000   SE214  : 964   Median :-142
Mean   :0.01648   Mean   : 6.474   SE123  : 399   Mean   :-131
3rd Qu.:0.00000   3rd Qu.: 9.000   SE331  : 298   3rd Qu.: -84
Max.   :1.00000   Max.   :10.000   SE232  : 273   Max.   :  -1
                                   (Other):2775
treatment
Mode :logical
FALSE:7283
```

```
summary(post_attack)
```

```
      idno          cntry      interview_datetime          
 Min.   :  10   SE     :1947   Min.   :2017-04-07 00:00:00.00  
 1st Qu.: 677   AT     :   0   1st Qu.:2017-06-14 00:00:00.00  
 Median :1247   BE     :   0   Median :2017-10-11 00:00:00.00  
 Mean   :1384   CH     :   0   Mean   :2017-08-30 12:45:29.11  
 3rd Qu.:1972   CZ     :   0   3rd Qu.:2017-11-03 00:00:00.00  
 Max.   :3514   DE     :   0   Max.   :2017-12-28 00:00:00.00  
                (Other):   0                                   
     nwspol           netusoft        trstplc         prtvtbse    
 Min.   :   0.00   Min.   :1.000   Min.   : 0.00   Min.   : 1.000  
 1st Qu.:  30.00   1st Qu.:5.000   1st Qu.: 6.00   1st Qu.: 5.000  
 Median :  60.00   Median :5.000   Median : 7.00   Median : 6.000  
 Mean   :  76.42   Mean   :4.461   Mean   : 6.69   Mean   : 5.365  
 3rd Qu.:  90.00   3rd Qu.:5.000   3rd Qu.: 8.00   3rd Qu.: 6.000  
 Max.   :1410.00   Max.   :5.000   Max.   :10.00   Max.   :11.000  

    imdfetn         impcntr         imbgeco          imwbcnt     
 Min.   :1.000   Min.   :1.000   Min.   : 0.000   Min.   : 0.000  
 1st Qu.:1.000   1st Qu.:1.000   1st Qu.: 5.000   1st Qu.: 5.000  
 Median :2.000   Median :2.000   Median : 6.000   Median : 7.000  
 Mean   :1.724   Mean   :1.809   Mean   : 5.791   Mean   : 6.272  
 3rd Qu.:2.000   3rd Qu.:2.000   3rd Qu.: 7.000   3rd Qu.: 8.000  
 Max.   :4.000   Max.   :4.000   Max.   :10.000   Max.   :10.000  

     rlgblg          rlgdgr          gvrfgap         rfgfrpc     
 Min.   :1.000   Min.   : 0.000   Min.   :1.000   Min.   :1.000  
 1st Qu.:1.000   1st Qu.: 0.000   1st Qu.:2.000   1st Qu.:3.000  
 Median :2.000   Median : 3.000   Median :2.000   Median :3.000  
 Mean   :1.617   Mean   : 3.077   Mean   :2.577   Mean   :3.322  
 3rd Qu.:2.000   3rd Qu.: 5.000   3rd Qu.:3.000   3rd Qu.:4.000  
 Max.   :2.000   Max.   :10.000   Max.   :5.000   Max.   :5.000  

    rfgbfml          gndr            agea          eisced     
 Min.   :1.000   Min.   :1.000   Min.   :20.00   Min.   : 1.000  
 1st Qu.:2.000   1st Qu.:1.000   1st Qu.:46.00   1st Qu.: 3.000  
 Median :2.000   Median :1.000   Median :58.00   Median : 5.000  
 Mean   :2.614   Mean   :1.493   Mean   :56.62   Mean   : 4.554  
 3rd Qu.:3.000   3rd Qu.:2.000   3rd Qu.:69.00   3rd Qu.: 6.000  
 Max.   :5.000   Max.   :2.000   Max.   :90.00   Max.   :55.000  

     uempla          hinctnta          region     time_centered    
 Min.   :0.00000   Min.   : 1.000   SE110  :383   Min.   :  0.0  
 1st Qu.:0.00000   1st Qu.: 4.000   SE224  :324   1st Qu.: 68.0  
 Median :0.00000   Median : 7.000   SE214  :256   Median :187.0  
 Mean   :0.01541   Mean   : 6.433   SE123  :103   Mean   :145.5  
```

```
 3rd Qu.:0.00000   3rd Qu.: 9.000   SE321  : 76   3rd Qu.:210.0
 Max.   :1.00000   Max.   :10.000   SE331  : 75   Max.   :265.0
                                    (Other):730
 treatment
 Mode:logical
 TRUE:1947
```

```
# Using tableone to create a summary table
table_one <- CreateTableOne(vars = covariates, strata = "treatment", data = swedish_da
```

```
Warning in CreateTableOne(vars = covariates, strata = "treatment", data =
swedish_data, : Dropping variable(s) interview_datetime  due to unsupported class.
```

```
table_one_print <- print(table_one, smd = TRUE)
```

```
                     Stratified by treatment
                      FALSE            TRUE             SMD
  n                      7283             1947
  idno (mean (SD))     1492.61 (893.53) 1384.02 (851.97)  0.124
  cntry (%)                                               <0.001
     AT                   0 (  0.0)        0 (  0.0)
     BE                   0 (  0.0)        0 (  0.0)
     CH                   0 (  0.0)        0 (  0.0)
     CZ                   0 (  0.0)        0 (  0.0)
     DE                   0 (  0.0)        0 (  0.0)
     EE                   0 (  0.0)        0 (  0.0)
     ES                   0 (  0.0)        0 (  0.0)
     FI                   0 (  0.0)        0 (  0.0)
     FR                   0 (  0.0)        0 (  0.0)
     GB                   0 (  0.0)        0 (  0.0)
     HU                   0 (  0.0)        0 (  0.0)
     IE                   0 (  0.0)        0 (  0.0)
     IL                   0 (  0.0)        0 (  0.0)
     IS                   0 (  0.0)        0 (  0.0)
     IT                   0 (  0.0)        0 (  0.0)
     LT                   0 (  0.0)        0 (  0.0)
     NL                   0 (  0.0)        0 (  0.0)
     NO                   0 (  0.0)        0 (  0.0)
     PL                   0 (  0.0)        0 (  0.0)
     PT                   0 (  0.0)        0 (  0.0)
     RU                   0 (  0.0)        0 (  0.0)
     SE                7283 (100.0)     1947 (100.0)
     SI                   0 (  0.0)        0 (  0.0)
  nwspol (mean (SD))    74.44 (100.81)   76.42 (96.15)   0.020
  netusoft (mean (SD))   4.49 (1.14)      4.46 (1.18)    0.029
  trstplc (mean (SD))    6.70 (2.02)      6.69 (1.99)    0.003
  prtvtbse (mean (SD))   5.45 (2.09)      5.37 (2.15)    0.042
  imdfetn (mean (SD))    1.72 (0.64)      1.72 (0.65)    0.005
```

impcntr (mean (SD))	1.80 (0.69)	1.81 (0.71)	0.007
imbgeco (mean (SD))	5.81 (2.23)	5.79 (2.24)	0.009
imwbcnt (mean (SD))	6.29 (2.23)	6.27 (2.25)	0.009
rlgblg (mean (SD))	1.63 (0.48)	1.62 (0.49)	0.030
rlgdgr (mean (SD))	2.97 (2.75)	3.08 (2.74)	0.039
gvrfgap (mean (SD))	2.59 (0.96)	2.58 (0.96)	0.018
rfgfrpc (mean (SD))	3.33 (0.90)	3.32 (0.88)	0.007
rfgbfml (mean (SD))	2.60 (0.98)	2.61 (0.99)	0.016
gndr (mean (SD))	1.48 (0.50)	1.49 (0.50)	0.022
agea (mean (SD))	54.68 (16.43)	56.62 (15.81)	0.120
eisced (mean (SD))	4.54 (2.34)	4.55 (2.65)	0.004
uempla (mean (SD))	0.02 (0.13)	0.02 (0.12)	0.009
hinctnta (mean (SD))	6.47 (2.86)	6.43 (2.87)	0.014
region (%)			0.058
99999	0 (0.0)	0 (0.0)	
AT11	0 (0.0)	0 (0.0)	
AT12	0 (0.0)	0 (0.0)	
AT13	0 (0.0)	0 (0.0)	
AT21	0 (0.0)	0 (0.0)	
AT22	0 (0.0)	0 (0.0)	
AT31	0 (0.0)	0 (0.0)	
AT32	0 (0.0)	0 (0.0)	
AT33	0 (0.0)	0 (0.0)	
AT34	0 (0.0)	0 (0.0)	
BE10	0 (0.0)	0 (0.0)	
BE21	0 (0.0)	0 (0.0)	
BE22	0 (0.0)	0 (0.0)	
BE23	0 (0.0)	0 (0.0)	
BE24	0 (0.0)	0 (0.0)	
BE25	0 (0.0)	0 (0.0)	
BE31	0 (0.0)	0 (0.0)	
BE32	0 (0.0)	0 (0.0)	
BE33	0 (0.0)	0 (0.0)	
BE34	0 (0.0)	0 (0.0)	
BE35	0 (0.0)	0 (0.0)	
CH01	0 (0.0)	0 (0.0)	
CH02	0 (0.0)	0 (0.0)	
CH03	0 (0.0)	0 (0.0)	
CH04	0 (0.0)	0 (0.0)	
CH05	0 (0.0)	0 (0.0)	
CH06	0 (0.0)	0 (0.0)	
CH07	0 (0.0)	0 (0.0)	
CZ010	0 (0.0)	0 (0.0)	
CZ020	0 (0.0)	0 (0.0)	
CZ031	0 (0.0)	0 (0.0)	
CZ032	0 (0.0)	0 (0.0)	
CZ041	0 (0.0)	0 (0.0)	
CZ042	0 (0.0)	0 (0.0)	
CZ051	0 (0.0)	0 (0.0)	
CZ052	0 (0.0)	0 (0.0)	
CZ053	0 (0.0)	0 (0.0)	
CZ063	0 (0.0)	0 (0.0)	
CZ064	0 (0.0)	0 (0.0)	
CZ071	0 (0.0)	0 (0.0)	

CZ072	0 (0.0)	0 (0.0)
CZ080	0 (0.0)	0 (0.0)
DE1	0 (0.0)	0 (0.0)
DE2	0 (0.0)	0 (0.0)
DE3	0 (0.0)	0 (0.0)
DE4	0 (0.0)	0 (0.0)
DE5	0 (0.0)	0 (0.0)
DE6	0 (0.0)	0 (0.0)
DE7	0 (0.0)	0 (0.0)
DE8	0 (0.0)	0 (0.0)
DE9	0 (0.0)	0 (0.0)
DEA	0 (0.0)	0 (0.0)
DEB	0 (0.0)	0 (0.0)
DEC	0 (0.0)	0 (0.0)
DED	0 (0.0)	0 (0.0)
DEE	0 (0.0)	0 (0.0)
DEF	0 (0.0)	0 (0.0)
DEG	0 (0.0)	0 (0.0)
EE001	0 (0.0)	0 (0.0)
EE004	0 (0.0)	0 (0.0)
EE006	0 (0.0)	0 (0.0)
EE007	0 (0.0)	0 (0.0)
EE008	0 (0.0)	0 (0.0)
ES11	0 (0.0)	0 (0.0)
ES12	0 (0.0)	0 (0.0)
ES13	0 (0.0)	0 (0.0)
ES21	0 (0.0)	0 (0.0)
ES22	0 (0.0)	0 (0.0)
ES23	0 (0.0)	0 (0.0)
ES24	0 (0.0)	0 (0.0)
ES30	0 (0.0)	0 (0.0)
ES41	0 (0.0)	0 (0.0)
ES42	0 (0.0)	0 (0.0)
ES43	0 (0.0)	0 (0.0)
ES51	0 (0.0)	0 (0.0)
ES52	0 (0.0)	0 (0.0)
ES53	0 (0.0)	0 (0.0)
ES61	0 (0.0)	0 (0.0)
ES62	0 (0.0)	0 (0.0)
ES63	0 (0.0)	0 (0.0)
ES70	0 (0.0)	0 (0.0)
FI193	0 (0.0)	0 (0.0)
FI194	0 (0.0)	0 (0.0)
FI195	0 (0.0)	0 (0.0)
FI196	0 (0.0)	0 (0.0)
FI197	0 (0.0)	0 (0.0)
FI1B1	0 (0.0)	0 (0.0)
FI1C1	0 (0.0)	0 (0.0)
FI1C2	0 (0.0)	0 (0.0)
FI1C3	0 (0.0)	0 (0.0)
FI1C4	0 (0.0)	0 (0.0)
FI1C5	0 (0.0)	0 (0.0)
FI1D1	0 (0.0)	0 (0.0)
FI1D2	0 (0.0)	0 (0.0)

FI1D3	0 (0.0)	0 (0.0)
FI1D4	0 (0.0)	0 (0.0)
FI1D5	0 (0.0)	0 (0.0)
FI1D6	0 (0.0)	0 (0.0)
FI1D7	0 (0.0)	0 (0.0)
FI200	0 (0.0)	0 (0.0)
FR10	0 (0.0)	0 (0.0)
FRB0	0 (0.0)	0 (0.0)
FRC1	0 (0.0)	0 (0.0)
FRC2	0 (0.0)	0 (0.0)
FRD1	0 (0.0)	0 (0.0)
FRD2	0 (0.0)	0 (0.0)
FRE1	0 (0.0)	0 (0.0)
FRE2	0 (0.0)	0 (0.0)
FRF1	0 (0.0)	0 (0.0)
FRF2	0 (0.0)	0 (0.0)
FRF3	0 (0.0)	0 (0.0)
FRG0	0 (0.0)	0 (0.0)
FRH0	0 (0.0)	0 (0.0)
FRI1	0 (0.0)	0 (0.0)
FRI2	0 (0.0)	0 (0.0)
FRI3	0 (0.0)	0 (0.0)
FRJ1	0 (0.0)	0 (0.0)
FRJ2	0 (0.0)	0 (0.0)
FRK1	0 (0.0)	0 (0.0)
FRK2	0 (0.0)	0 (0.0)
FRL0	0 (0.0)	0 (0.0)
HU101	0 (0.0)	0 (0.0)
HU102	0 (0.0)	0 (0.0)
HU211	0 (0.0)	0 (0.0)
HU212	0 (0.0)	0 (0.0)
HU213	0 (0.0)	0 (0.0)
HU221	0 (0.0)	0 (0.0)
HU222	0 (0.0)	0 (0.0)
HU223	0 (0.0)	0 (0.0)
HU231	0 (0.0)	0 (0.0)
HU232	0 (0.0)	0 (0.0)
HU233	0 (0.0)	0 (0.0)
HU311	0 (0.0)	0 (0.0)
HU312	0 (0.0)	0 (0.0)
HU313	0 (0.0)	0 (0.0)
HU321	0 (0.0)	0 (0.0)
HU322	0 (0.0)	0 (0.0)
HU323	0 (0.0)	0 (0.0)
HU331	0 (0.0)	0 (0.0)
HU332	0 (0.0)	0 (0.0)
HU333	0 (0.0)	0 (0.0)
IE011	0 (0.0)	0 (0.0)
IE012	0 (0.0)	0 (0.0)
IE013	0 (0.0)	0 (0.0)
IE021	0 (0.0)	0 (0.0)
IE022	0 (0.0)	0 (0.0)
IE023	0 (0.0)	0 (0.0)
IE024	0 (0.0)	0 (0.0)

IE025	0 (0.0)	0 (0.0)
IL	0 (0.0)	0 (0.0)
IS001	0 (0.0)	0 (0.0)
IS002	0 (0.0)	0 (0.0)
ITC1	0 (0.0)	0 (0.0)
ITC2	0 (0.0)	0 (0.0)
ITC3	0 (0.0)	0 (0.0)
ITC4	0 (0.0)	0 (0.0)
ITF1	0 (0.0)	0 (0.0)
ITF3	0 (0.0)	0 (0.0)
ITF4	0 (0.0)	0 (0.0)
ITF5	0 (0.0)	0 (0.0)
ITF6	0 (0.0)	0 (0.0)
ITG1	0 (0.0)	0 (0.0)
ITG2	0 (0.0)	0 (0.0)
ITH1	0 (0.0)	0 (0.0)
ITH2	0 (0.0)	0 (0.0)
ITH3	0 (0.0)	0 (0.0)
ITH4	0 (0.0)	0 (0.0)
ITH5	0 (0.0)	0 (0.0)
ITI1	0 (0.0)	0 (0.0)
ITI2	0 (0.0)	0 (0.0)
ITI3	0 (0.0)	0 (0.0)
ITI4	0 (0.0)	0 (0.0)
LT001	0 (0.0)	0 (0.0)
LT002	0 (0.0)	0 (0.0)
LT003	0 (0.0)	0 (0.0)
LT004	0 (0.0)	0 (0.0)
LT005	0 (0.0)	0 (0.0)
LT006	0 (0.0)	0 (0.0)
LT007	0 (0.0)	0 (0.0)
LT008	0 (0.0)	0 (0.0)
LT009	0 (0.0)	0 (0.0)
LT00A	0 (0.0)	0 (0.0)
NL11	0 (0.0)	0 (0.0)
NL12	0 (0.0)	0 (0.0)
NL13	0 (0.0)	0 (0.0)
NL21	0 (0.0)	0 (0.0)
NL22	0 (0.0)	0 (0.0)
NL23	0 (0.0)	0 (0.0)
NL31	0 (0.0)	0 (0.0)
NL32	0 (0.0)	0 (0.0)
NL33	0 (0.0)	0 (0.0)
NL34	0 (0.0)	0 (0.0)
NL41	0 (0.0)	0 (0.0)
NL42	0 (0.0)	0 (0.0)
NO01	0 (0.0)	0 (0.0)
NO02	0 (0.0)	0 (0.0)
NO03	0 (0.0)	0 (0.0)
NO04	0 (0.0)	0 (0.0)
NO05	0 (0.0)	0 (0.0)
NO06	0 (0.0)	0 (0.0)
NO07	0 (0.0)	0 (0.0)
PL11	0 (0.0)	0 (0.0)

PL12	0 (0.0)	0 (0.0)
PL21	0 (0.0)	0 (0.0)
PL22	0 (0.0)	0 (0.0)
PL31	0 (0.0)	0 (0.0)
PL32	0 (0.0)	0 (0.0)
PL33	0 (0.0)	0 (0.0)
PL34	0 (0.0)	0 (0.0)
PL41	0 (0.0)	0 (0.0)
PL42	0 (0.0)	0 (0.0)
PL43	0 (0.0)	0 (0.0)
PL51	0 (0.0)	0 (0.0)
PL52	0 (0.0)	0 (0.0)
PL61	0 (0.0)	0 (0.0)
PL62	0 (0.0)	0 (0.0)
PL63	0 (0.0)	0 (0.0)
PT11	0 (0.0)	0 (0.0)
PT15	0 (0.0)	0 (0.0)
PT16	0 (0.0)	0 (0.0)
PT17	0 (0.0)	0 (0.0)
PT18	0 (0.0)	0 (0.0)
RU11	0 (0.0)	0 (0.0)
RU12	0 (0.0)	0 (0.0)
RU13	0 (0.0)	0 (0.0)
RU14	0 (0.0)	0 (0.0)
RU15	0 (0.0)	0 (0.0)
RU16	0 (0.0)	0 (0.0)
RU17	0 (0.0)	0 (0.0)
RU18	0 (0.0)	0 (0.0)
SE110	1374 (18.9)	383 (19.7)
SE121	177 (2.4)	49 (2.5)
SE122	217 (3.0)	64 (3.3)
SE123	399 (5.5)	103 (5.3)
SE124	233 (3.2)	53 (2.7)
SE125	180 (2.5)	50 (2.6)
SE211	109 (1.5)	30 (1.5)
SE212	60 (0.8)	15 (0.8)
SE213	86 (1.2)	26 (1.3)
SE214	964 (13.2)	256 (13.1)
SE221	191 (2.6)	52 (2.7)
SE224	1200 (16.5)	324 (16.6)
SE231	202 (2.8)	51 (2.6)
SE232	273 (3.7)	66 (3.4)
SE311	141 (1.9)	40 (2.1)
SE312	236 (3.2)	67 (3.4)
SE313	268 (3.7)	69 (3.5)
SE321	269 (3.7)	76 (3.9)
SE322	190 (2.6)	45 (2.3)
SE331	298 (4.1)	75 (3.9)
SE332	216 (3.0)	53 (2.7)
SI011	0 (0.0)	0 (0.0)
SI012	0 (0.0)	0 (0.0)
SI013	0 (0.0)	0 (0.0)
SI014	0 (0.0)	0 (0.0)
SI015	0 (0.0)	0 (0.0)

SI016	0 (0.0)	0 (0.0)
SI017	0 (0.0)	0 (0.0)
SI018	0 (0.0)	0 (0.0)
SI021	0 (0.0)	0 (0.0)
SI022	0 (0.0)	0 (0.0)
SI023	0 (0.0)	0 (0.0)
SI024	0 (0.0)	0 (0.0)
UKC	0 (0.0)	0 (0.0)
UKD	0 (0.0)	0 (0.0)
UKE	0 (0.0)	0 (0.0)
UKF	0 (0.0)	0 (0.0)
UKG	0 (0.0)	0 (0.0)
UKH	0 (0.0)	0 (0.0)
UKI	0 (0.0)	0 (0.0)
UKJ	0 (0.0)	0 (0.0)
UKK	0 (0.0)	0 (0.0)
UKL	0 (0.0)	0 (0.0)
UKM	0 (0.0)	0 (0.0)
UKN	0 (0.0)	0 (0.0)

```
kable_table <- kable(table_one_print) #to copy to word
#Balance shows very negligent differences between pre- and post- attack data between a
```

Another balance test

This chunks output is in the thesis Annex

```
# Rename target variables
swedish_data <- swedish_data %>%
  mutate(
    perception_immigrants = imdfetn,
    perception_refugees = gvrfgap
  )

# Visualize balance with cobalt package
bal.tab <- bal.tab(treatment ~ perception_immigrants + perception_refugees + nwspol +
```

```
Note: `s.d.denom` not specified; assuming "pooled".
```

```
#Confirms previous results of a well balanced control and treatment group where there

#Extract for Word document
# Extract the balance table as a data frame with the variable names intact
bal.tab_df <- as.data.frame(bal.tab$Balance)
bal.tab_df$Variable <- rownames(bal.tab$Balance)  # Add the variable names as a new co
rownames(bal.tab_df) <- NULL  # Remove row names to clean up the data frame
bal.tab_flex <- flextable(bal.tab_df)
# Add a title to the flextable
bal.tab_flex <- add_header_lines(bal.tab_flex, values = "Balance Measures for Treatmen

# Create a new Word document
```

```
doc <- read_docx()

# Add the flextable to the document
doc <- body_add_flextable(doc, value = bal.tab_flex)

# Save the document, add to my Word document
print(doc, target = "bal_tab_output.docx")
```

Constructing the models

```
# Estimation of treatment effects using regression models
model1 <- lm(perception_immigrants ~ treatment + agea + region + time_centered, data =
model2 <- lm(perception_refugees ~ treatment + agea + region + time_centered, data = s

swedish_data <- swedish_data %>%
  mutate(
    combination_value = (perception_immigrants+perception_refugees)
  )

model3 <- lm(combination_value ~ treatment + agea + region + time_centered, data = swe

# Summary of the models
summary(model1)
```

```
Call:
lm(formula = perception_immigrants ~ treatment + agea + region +
    time_centered, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-1.0851 -0.6229  0.1599  0.3276  2.3344

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)    1.350e+00  3.001e-02  44.989  < 2e-16 ***
treatmentTRUE -2.467e-02  3.383e-02  -0.729  0.46587
agea           5.615e-03  4.076e-04  13.775  < 2e-16 ***
regionSE121    1.415e-01  4.437e-02   3.189  0.00143 **
regionSE122    1.981e-01  4.036e-02   4.909 9.33e-07 ***
regionSE123    1.257e-02  3.181e-02   0.395  0.69273
regionSE124    1.225e-01  4.004e-02   3.060  0.00222 **
regionSE125    2.336e-02  4.416e-02   0.529  0.59686
regionSE211    9.049e-02  5.537e-02   1.634  0.10222
regionSE212   -4.256e-01  7.415e-02  -5.741 9.73e-09 ***
regionSE213   -1.322e-02  6.127e-02  -0.216  0.82918
regionSE214    6.581e-02  2.340e-02   2.812  0.00493 **
regionSE221    3.124e-01  4.298e-02   7.269 3.91e-13 ***
regionSE224    1.829e-01  2.198e-02   8.319  < 2e-16 ***
regionSE231    6.974e-02  4.227e-02   1.650  0.09897 .
regionSE232   -5.980e-02  3.726e-02  -1.605  0.10854
regionSE311   -2.081e-01  4.902e-02  -4.246 2.20e-05 ***
```

```
regionSE312    3.342e-01  3.908e-02   8.553  < 2e-16 ***
regionSE313    9.791e-02  3.735e-02   2.622  0.00877 **
regionSE321    4.404e-02  3.709e-02   1.187  0.23515
regionSE322    2.385e-01  4.363e-02   5.466 4.72e-08 ***
regionSE331   -8.179e-02  3.580e-02  -2.285  0.02236 *
regionSE332   -9.894e-02  4.112e-02  -2.406  0.01615 *
time_centered  5.898e-05  1.077e-04   0.548  0.58375
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6279 on 9206 degrees of freedom
Multiple R-squared:  0.0542,    Adjusted R-squared:  0.05183
F-statistic: 22.94 on 23 and 9206 DF,  p-value: < 2.2e-16
```

```r
# The treatment effect is slightly negative but not statistically significant, indicat
summary(model2)
```

```
Call:
lm(formula = perception_refugees ~ treatment + agea + region +
    time_centered, data = swedish_data)

Residuals:
     Min       1Q   Median       3Q      Max
-2.03182 -0.63448 -0.06979  0.57249  2.61217

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)    2.4724607  0.0445435  55.507  < 2e-16 ***
treatmentTRUE  0.0146406  0.0502254   0.291 0.770677
agea          -0.0009541  0.0006051  -1.577 0.114894
regionSE121   -0.0106961  0.0658691  -0.162 0.871007
regionSE122    0.5381656  0.0599157   8.982  < 2e-16 ***
regionSE123    0.3149258  0.0472211   6.669 2.72e-11 ***
regionSE124    0.4948316  0.0594385   8.325  < 2e-16 ***
regionSE125   -0.2406429  0.0655482  -3.671 0.000243 ***
regionSE211   -0.1874195  0.0821911  -2.280 0.022613 *
regionSE212   -0.2609103  0.1100695  -2.370 0.017789 *
regionSE213   -0.0120618  0.0909534  -0.133 0.894501
regionSE214    0.2623258  0.0347414   7.551 4.74e-14 ***
regionSE221    0.7164059  0.0637985  11.229  < 2e-16 ***
regionSE224    0.1708757  0.0326335   5.236 1.68e-07 ***
regionSE231    0.1455680  0.0627462   2.320 0.020365 *
regionSE232   -0.3122590  0.0553149  -5.645 1.70e-08 ***
regionSE311   -0.0801198  0.0727727  -1.101 0.270943
regionSE312    0.5230951  0.0580078   9.018  < 2e-16 ***
regionSE313    0.3037389  0.0554441   5.478 4.41e-08 ***
regionSE321    0.0517000  0.0550618   0.939 0.347784
regionSE322    0.6044283  0.0647650   9.333  < 2e-16 ***
regionSE331    0.1655577  0.0531484   3.115 0.001845 **
regionSE332   -0.0910070  0.0610452  -1.491 0.136045
time_centered -0.0001024  0.0001598  -0.641 0.521537
---
```

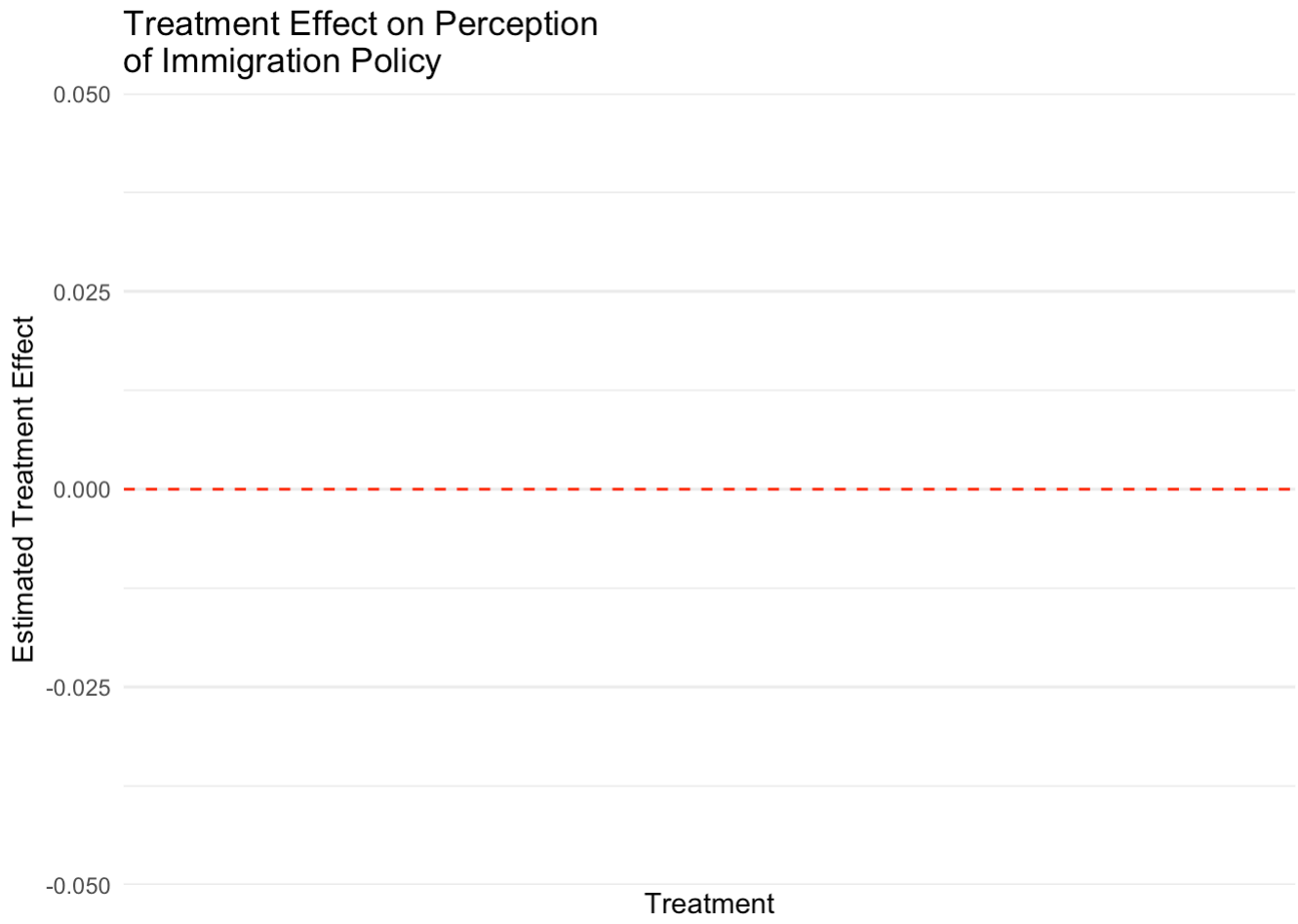
```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9321 on 9206 degrees of freedom
Multiple R-squared:  0.05892,   Adjusted R-squared:  0.05657
F-statistic: 25.06 on 23 and 9206 DF,  p-value: < 2.2e-16
```

```r
#The treatment effect is not statistically significant, indicating no significant impa
summary(model3)
```

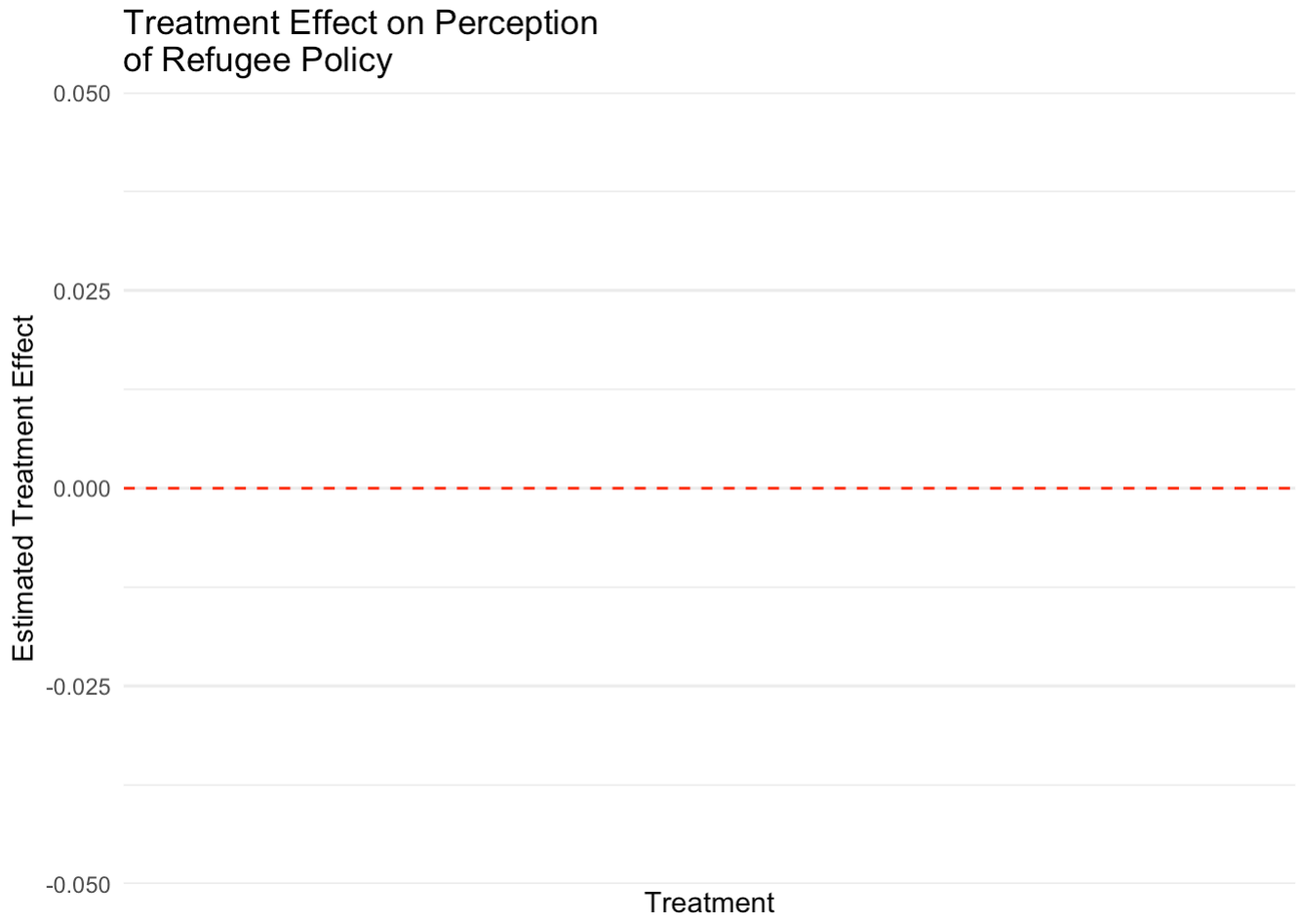
```
Call:
lm(formula = combination_value ~ treatment + agea + region + 
    time_centered, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max 
-3.0008 -1.0629 -0.1043  0.8770  4.2475 

Coefficients:
                Estimate Std. Error t value Pr(>|t|)    
(Intercept)    3.822e+00  6.456e-02  59.206  < 2e-16 ***
treatmentTRUE -1.003e-02  7.280e-02  -0.138  0.89039    
agea           4.661e-03  8.770e-04   5.314 1.09e-07 ***
regionSE121    1.308e-01  9.547e-02   1.370  0.17071    
regionSE122    7.363e-01  8.684e-02   8.478  < 2e-16 ***
regionSE123    3.275e-01  6.844e-02   4.785 1.74e-06 ***
regionSE124    6.174e-01  8.615e-02   7.166 8.31e-13 ***
regionSE125   -2.173e-01  9.500e-02  -2.287  0.02221 *  
regionSE211   -9.693e-02  1.191e-01  -0.814  0.41585    
regionSE212   -6.866e-01  1.595e-01  -4.304 1.70e-05 ***
regionSE213   -2.528e-02  1.318e-01  -0.192  0.84792    
regionSE214    3.281e-01  5.035e-02   6.517 7.57e-11 ***
regionSE221    1.029e+00  9.247e-02  11.126  < 2e-16 ***
regionSE224    3.538e-01  4.730e-02   7.479 8.16e-14 ***
regionSE231    2.153e-01  9.094e-02   2.368  0.01793 *  
regionSE232   -3.721e-01  8.017e-02  -4.641 3.52e-06 ***
regionSE311   -2.883e-01  1.055e-01  -2.733  0.00629 ** 
regionSE312    8.573e-01  8.408e-02  10.197  < 2e-16 ***
regionSE313    4.017e-01  8.036e-02   4.998 5.90e-07 ***
regionSE321    9.574e-02  7.981e-02   1.200  0.23032    
regionSE322    8.429e-01  9.387e-02   8.979  < 2e-16 ***
regionSE331    8.376e-02  7.703e-02   1.087  0.27690    
regionSE332   -1.899e-01  8.848e-02  -2.147  0.03183 *  
time_centered -4.345e-05  2.316e-04  -0.188  0.85120    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.351 on 9206 degrees of freedom
Multiple R-squared:  0.05743,   Adjusted R-squared:  0.05508
F-statistic: 24.39 on 23 and 9206 DF,  p-value: < 2.2e-16
```

```r
#The treatment effect is not statistically significant, indicating no significant impa
```

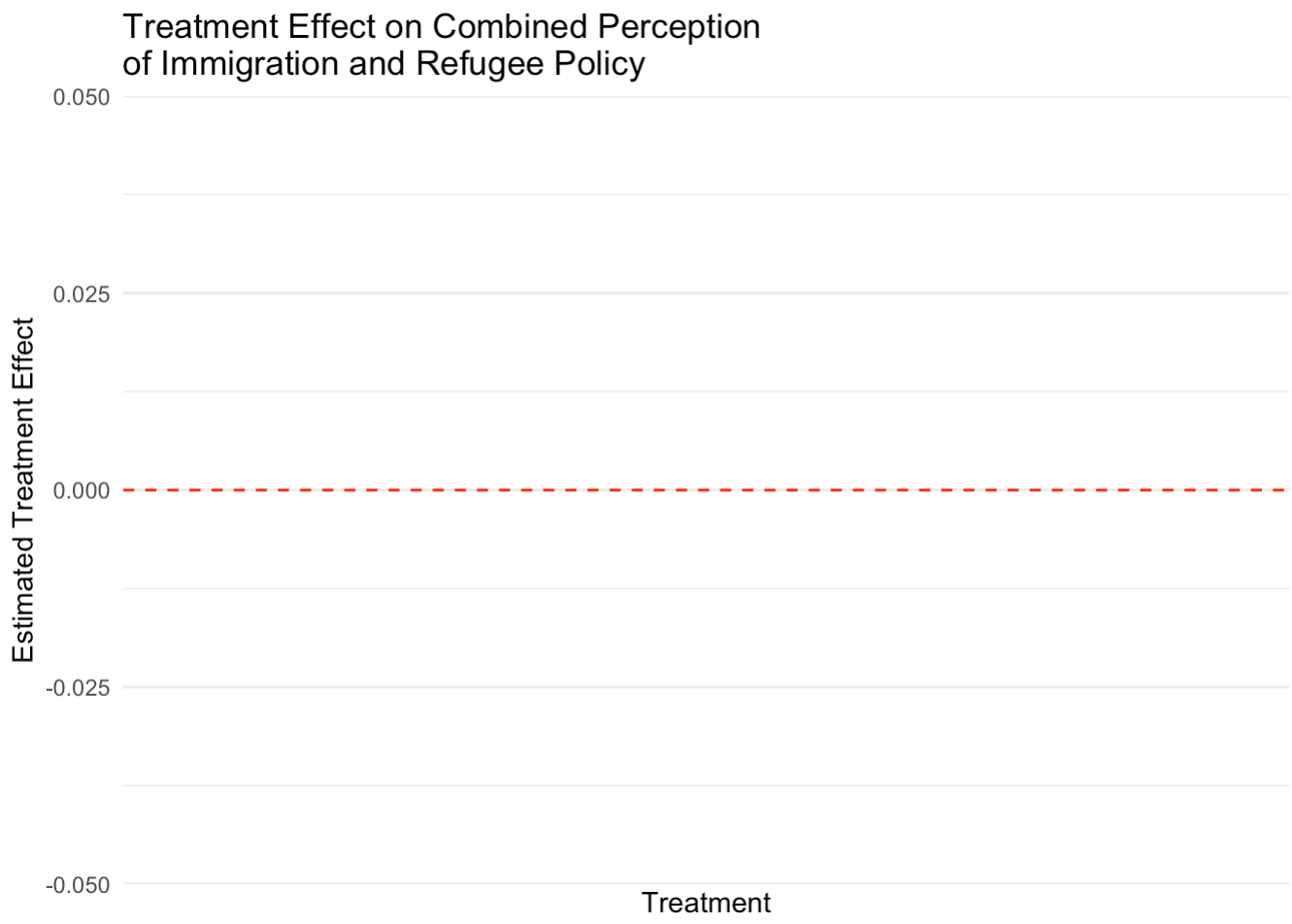
```r
#Visualizations of the models
# Tidy up the model summaries to extract coefficients and confidence intervals
model1_tidy <- tidy(model1, conf.int = TRUE)
model2_tidy <- tidy(model2, conf.int = TRUE)
model3_tidy <- tidy(model3, conf.int = TRUE)

# Filter to only include the treatment effect for each model
model1_treatment <- model1_tidy %>% filter(term == "treatment")
model2_treatment <- model2_tidy %>% filter(term == "treatment")
model3_treatment <- model3_tidy %>% filter(term == "treatment")

# Plot for Model 1
plot_model1 <- ggplot(model1_treatment, aes(x = term, y = estimate, ymin = conf.low, y
  geom_pointrange(color = "blue") +
  geom_hline(yintercept = 0, linetype = "dashed", color = "red") +
  labs(title = "Treatment Effect on Perception\nof Immigration Policy",
       x = "Treatment",
       y = "Estimated Treatment Effect") +
  theme_minimal()

# Plot for Model 2
plot_model2 <- ggplot(model2_treatment, aes(x = term, y = estimate, ymin = conf.low, y
  geom_pointrange(color = "green") +
  geom_hline(yintercept = 0, linetype = "dashed", color = "red") +
  labs(title = "Treatment Effect on Perception\nof Refugee Policy",
       x = "Treatment",
       y = "Estimated Treatment Effect") +
  theme_minimal()

# Plot for Model 3
plot_model3 <- ggplot(model3_treatment, aes(x = term, y = estimate, ymin = conf.low, y
  geom_pointrange(color = "purple") +
  geom_hline(yintercept = 0, linetype = "dashed", color = "red") +
  labs(title = "Treatment Effect on Combined Perception\nof Immigration and Refugee Po
       x = "Treatment",
       y = "Estimated Treatment Effect") +
  theme_minimal()

# Print the plots
print(plot_model1)
```




```
print(plot_model2)
```



```
print(plot_model3)
```




```
#confirm the fact that there is no significant difference between treatment and contro

# Confirm results with a t-test
t.test(perception_immigrants ~ treatment, data = swedish_data)
```

```
    Welch Two Sample t-test

data:  perception_immigrants by treatment
t = -0.21221, df = 3048.4, p-value = 0.832
alternative hypothesis: true difference in means between group FALSE and group TRUE is
not equal to 0
95 percent confidence interval:
 -0.03591286  0.02889847
sample estimates:
mean in group FALSE  mean in group TRUE
           1.720170            1.723677
```

```
#t-value: -0.21221, p-value: 0.8321, indicating that there is no significant differenc

t.test(perception_refugees ~ treatment, data = swedish_data)
```

```
    Welch Two Sample t-test
```

```
data:  perception_refugees by treatment
t = 0.69736, df = 3069.3, p-value = 0.4856
alternative hypothesis: true difference in means between group FALSE and group TRUE is
not equal to 0
95 percent confidence interval:
 -0.03091368  0.06504146
sample estimates:
mean in group FALSE  mean in group TRUE
           2.593849            2.576785
```

```
#t-value: 0.69736, p-value: 0.4856, also indicating that there is no significant diffe
```

Robustness checks

```
# Robustness checks
#Multicollinearity checks
vif(model1)
```

```
                GVIF Df GVIF^(1/(2*Df))
treatment     4.461018  1        2.112112
agea          1.036503  1        1.018088
region        1.034558 20        1.000850
time_centered 4.455395  1        2.110781
```

```
vif(model2)
```

```
                GVIF Df GVIF^(1/(2*Df))
treatment     4.461018  1        2.112112
agea          1.036503  1        1.018088
region        1.034558 20        1.000850
time_centered 4.455395  1        2.110781
```

```
vif(model3)
```

```
                GVIF Df GVIF^(1/(2*Df))
treatment     4.461018  1        2.112112
agea          1.036503  1        1.018088
region        1.034558 20        1.000850
time_centered 4.455395  1        2.110781
```

```
#Overall no issues of multicollinearity between variables across all models

#Alternative Model Specifications
# Systematically testing all subsets of the 4 variables on all 3 models

#Models with only 1 variable
# Model 1: Only treatment
model1_ <- lm(perception_immigrants ~ treatment, data = swedish_data)
model2_ <- lm(perception_refugees ~ treatment, data = swedish_data)
```

```
model3_ <- lm(combination_value ~ treatment, data = swedish_data)

# Print summaries
summary(model1_)
```

```
Call:
lm(formula = perception_immigrants ~ treatment, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-0.7237 -0.7202  0.2798  0.2798  2.2798

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)   1.720170   0.007556 227.657   <2e-16 ***
treatmentTRUE 0.003507   0.016452   0.213    0.831
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6448 on 9228 degrees of freedom
Multiple R-squared:  4.925e-06, Adjusted R-squared:  -0.0001034
F-statistic: 0.04545 on 1 and 9228 DF,  p-value: 0.8312
```

```
summary(model2_)
```

```
Call:
lm(formula = perception_refugees ~ treatment, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-1.5938 -0.5938  0.4062  0.4062  2.4232

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)    2.59385    0.01124 230.674   <2e-16 ***
treatmentTRUE -0.01706    0.02448  -0.697    0.486
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9596 on 9228 degrees of freedom
Multiple R-squared:  5.264e-05, Adjusted R-squared:  -5.572e-05
F-statistic: 0.4858 on 1 and 9228 DF,  p-value: 0.4858
```

```
summary(model3_)
```

```
Call:
lm(formula = combination_value ~ treatment, data = swedish_data)

Residuals:
   Min     1Q Median     3Q    Max
```

```
-2.314 -1.314 -0.314  0.686  4.699

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)    4.31402    0.01629 264.903   <2e-16 ***
treatmentTRUE -0.01356    0.03546  -0.382    0.702
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.39 on 9228 degrees of freedom
Multiple R-squared:  1.584e-05, Adjusted R-squared:  -9.252e-05
F-statistic: 0.1462 on 1 and 9228 DF,  p-value: 0.7022
```

```r
# Model 2: Only agea
model4 <- lm(perception_immigrants ~ agea, data = swedish_data)
model5 <- lm(perception_refugees ~ agea, data = swedish_data)
model6 <- lm(combination_value ~ agea, data = swedish_data)

# Print summaries
summary(model4)
```

```
Call:
lm(formula = perception_immigrants ~ agea, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-0.9115 -0.6604  0.2032  0.3178  2.3669

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 1.4202207  0.0233996   60.69   <2e-16 ***
agea        0.0054582  0.0004073   13.40   <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6386 on 9228 degrees of freedom
Multiple R-squared:  0.01909,   Adjusted R-squared:  0.01899
F-statistic: 179.6 on 1 and 9228 DF,  p-value: < 2.2e-16
```

```r
summary(model5)
```

```
Call:
lm(formula = perception_refugees ~ agea, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-1.6434 -0.5998  0.3613  0.4315  2.4564

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  2.6761949  0.0351486   76.14   <2e-16 ***
```

```
agea         -0.0015601  0.0006117   -2.55   0.0108 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9593 on 9228 degrees of freedom
Multiple R-squared:  0.0007043, Adjusted R-squared:  0.000596
F-statistic: 6.504 on 1 and 9228 DF,  p-value: 0.01078
```

```r
summary(model6)
```

```
Call:
lm(formula = combination_value ~ agea, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-2.4317 -1.2523 -0.2679  0.7087  4.7204

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 4.0964156  0.0508682  80.530  < 2e-16 ***
agea        0.0038981  0.0008853   4.403 1.08e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.388 on 9228 degrees of freedom
Multiple R-squared:  0.002096,  Adjusted R-squared:  0.001988
F-statistic: 19.39 on 1 and 9228 DF,  p-value: 1.08e-05
```

```r
# Model 3: Only region
model7 <- lm(perception_immigrants ~ region, data = swedish_data)
model8 <- lm(perception_refugees ~ region, data = swedish_data)
model9 <- lm(combination_value ~ region, data = swedish_data)

# Print summaries
summary(model7)
```

```
Call:
lm(formula = perception_immigrants ~ region, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-1.0000 -0.6488  0.1739  0.3512  2.4248

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.648833   0.015130 108.978  < 2e-16 ***
regionSE121  0.138777   0.044817   3.097  0.00196 **
regionSE122  0.180348   0.040746   4.426 9.70e-06 ***
regionSE123 -0.007399   0.032096  -0.231  0.81769
regionSE124  0.116901   0.040438   2.891  0.00385 **
regionSE125  0.068558   0.044471   1.542  0.12319
```

```
regionSE211  0.120951   0.055879   2.165  0.03045 *
regionSE212 -0.368833   0.074777  -4.932 8.26e-07 ***
regionSE213  0.029738   0.061807   0.481  0.63042
regionSE214  0.068380   0.023635   2.893  0.00382 **
regionSE221  0.305899   0.043406   7.047 1.95e-12 ***
regionSE224  0.177282   0.022200   7.986 1.56e-15 ***
regionSE231  0.042866   0.042646   1.005  0.31484
regionSE232 -0.073612   0.037621  -1.957  0.05042 .
regionSE311 -0.195795   0.049508  -3.955 7.72e-05 ***
regionSE312  0.351167   0.039450   8.901  < 2e-16 ***
regionSE313  0.107843   0.037715   2.859  0.00425 **
regionSE321  0.084500   0.037346   2.263  0.02368 *
regionSE322  0.249039   0.044050   5.654 1.62e-08 ***
regionSE331 -0.091192   0.036155  -2.522  0.01168 *
regionSE332 -0.109800   0.041522  -2.644  0.00820 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6342 on 9209 degrees of freedom
Multiple R-squared:  0.0347,    Adjusted R-squared:  0.0326
F-statistic: 16.55 on 20 and 9209 DF,  p-value: < 2.2e-16
```

```
summary(model8)
```

```
Call:
lm(formula = perception_refugees ~ region, data = swedish_data)

Residuals:
     Min       1Q   Median       3Q      Max
-2.03404 -0.60236 -0.03404  0.56972  2.58929

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  2.430279   0.022236 109.293  < 2e-16 ***
regionSE121 -0.009925   0.065867  -0.151 0.880232
regionSE122  0.541251   0.059884   9.038  < 2e-16 ***
regionSE123  0.318725   0.047170   6.757 1.50e-11 ***
regionSE124  0.496295   0.059431   8.351  < 2e-16 ***
regionSE125 -0.247670   0.065358  -3.789 0.000152 ***
regionSE211 -0.192869   0.082125  -2.348 0.018871 *
regionSE212 -0.270279   0.109900  -2.459 0.013938 *
regionSE213 -0.019565   0.090836  -0.215 0.829473
regionSE214  0.262344   0.034735   7.553 4.67e-14 ***
regionSE221  0.717869   0.063793  11.253  < 2e-16 ***
regionSE224  0.172083   0.032627   5.274 1.36e-07 ***
regionSE231  0.150749   0.062676   2.405 0.016183 *
regionSE232 -0.309335   0.055292  -5.595 2.27e-08 ***
regionSE311 -0.082213   0.072761  -1.130 0.258551
regionSE312  0.520216   0.057980   8.972  < 2e-16 ***
regionSE313  0.302659   0.055429   5.460 4.88e-08 ***
regionSE321  0.045083   0.054887   0.821 0.411449
regionSE322  0.603764   0.064740   9.326  < 2e-16 ***
```

```
regionSE331  0.167576   0.053137   3.154 0.001618 **
regionSE332 -0.088271   0.061025  -1.446 0.148076
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9321 on 9209 degrees of freedom
Multiple R-squared:  0.05859,   Adjusted R-squared:  0.05655
F-statistic: 28.66 on 20 and 9209 DF,  p-value: < 2.2e-16
```

```r
summary(model9)
```

```
Call:
lm(formula = combination_value ~ region, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-2.9505 -1.0791 -0.0791  0.9209  4.3038

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  4.07911    0.03227 126.393  < 2e-16 ***
regionSE121  0.12885    0.09560   1.348  0.17774
regionSE122  0.72160    0.08691   8.302  < 2e-16 ***
regionSE123  0.31133    0.06846   4.547 5.50e-06 ***
regionSE124  0.61320    0.08626   7.109 1.26e-12 ***
regionSE125 -0.17911    0.09486  -1.888  0.05903 .
regionSE211 -0.07192    0.11919  -0.603  0.54628
regionSE212 -0.63911    0.15951  -4.007 6.20e-05 ***
regionSE213  0.01017    0.13184   0.077  0.93849
regionSE214  0.33072    0.05041   6.560 5.66e-11 ***
regionSE221  1.02377    0.09259  11.057  < 2e-16 ***
regionSE224  0.34937    0.04735   7.378 1.75e-13 ***
regionSE231  0.19362    0.09097   2.128  0.03333 *
regionSE232 -0.38295    0.08025  -4.772 1.85e-06 ***
regionSE311 -0.27801    0.10560  -2.633  0.00849 **
regionSE312  0.87138    0.08415  10.355  < 2e-16 ***
regionSE313  0.41050    0.08045   5.103 3.42e-07 ***
regionSE321  0.12958    0.07966   1.627  0.10384
regionSE322  0.85280    0.09396   9.076  < 2e-16 ***
regionSE331  0.07638    0.07712   0.990  0.32199
regionSE332 -0.19807    0.08857  -2.236  0.02535 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.353 on 9209 degrees of freedom
Multiple R-squared:  0.05451,   Adjusted R-squared:  0.05246
F-statistic: 26.55 on 20 and 9209 DF,  p-value: < 2.2e-16
```

```r
# Model 4: Only time_centered
model10 <- lm(perception_immigrants ~ time_centered, data = swedish_data)
model11 <- lm(perception_refugees ~ time_centered, data = swedish_data)
model12 <- lm(combination_value ~ time_centered, data = swedish_data)
```

```
# Print summaries
summary(model10)
```

```
Call:
lm(formula = perception_immigrants ~ time_centered, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max 
-0.7240 -0.7202  0.2786  0.2799  2.2803 

Coefficients:
               Estimate Std. Error t value Pr(>|t|)    
(Intercept)   1.722e+00  7.716e-03 223.126   <2e-16 ***
time_centered 9.210e-06  5.238e-05   0.176     0.86    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6448 on 9228 degrees of freedom
Multiple R-squared:  3.351e-06, Adjusted R-squared:  -0.000105 
F-statistic: 0.03092 on 1 and 9228 DF,  p-value: 0.8604
```

```
summary(model11)
```

```
Call:
lm(formula = perception_refugees ~ time_centered, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max 
-1.6017 -0.5959  0.3993  0.4126  2.4349 

Coefficients:
               Estimate Std. Error t value Pr(>|t|)    
(Intercept)    2.585e+00  1.148e-02 225.117   <2e-16 ***
time_centered -7.469e-05  7.794e-05  -0.958    0.338    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9596 on 9228 degrees of freedom
Multiple R-squared:  9.95e-05,  Adjusted R-squared:  -8.85e-06 
F-statistic: 0.9183 on 1 and 9228 DF,  p-value: 0.3379
```

```
summary(model12)
```

```
Call:
lm(formula = combination_value ~ time_centered, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max 
-2.3212 -1.3076 -0.3090  0.6907  4.7066 
```

```
Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)    4.306e+00  1.663e-02  258.96   <2e-16 ***
time_centered -6.548e-05  1.129e-04   -0.58    0.562
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.39 on 9228 degrees of freedom
Multiple R-squared:  3.646e-05, Adjusted R-squared:  -7.19e-05
F-statistic: 0.3365 on 1 and 9228 DF,  p-value: 0.5619
```

```
#None of these models is significant and the R-squared value is much lower than in the

#Models with only 2 varibales

# Model 5: treatment + agea
model13 <- lm(perception_immigrants ~ treatment + agea, data = swedish_data)
model14 <- lm(perception_refugees ~ treatment + agea, data = swedish_data)
model15 <- lm(combination_value ~ treatment + agea, data = swedish_data)

# Print summaries
summary(model13)
```

```
Call:
lm(formula = perception_immigrants ~ treatment + agea, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-0.9133 -0.6563  0.2016  0.3164  2.3726

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)    1.4212414  0.0235188  60.430   <2e-16 ***
treatmentTRUE -0.0070711  0.0163136  -0.433    0.665
agea           0.0054667  0.0004078  13.407   <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6387 on 9227 degrees of freedom
Multiple R-squared:  0.01911,   Adjusted R-squared:  0.0189
F-statistic:  89.9 on 2 and 9227 DF,  p-value: < 2.2e-16
```

```
summary(model14)
```

```
Call:
lm(formula = perception_refugees ~ treatment + agea, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-1.6458 -0.5995  0.3588  0.4298  2.4670
```

```
Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)    2.6782270  0.0353274  75.812   <2e-16 ***
treatmentTRUE -0.0140780  0.0245046  -0.575   0.5656
agea          -0.0015431  0.0006125  -2.519   0.0118 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9593 on 9227 degrees of freedom
Multiple R-squared:  0.0007401, Adjusted R-squared:  0.0005235
F-statistic: 3.417 on 2 and 9227 DF,  p-value: 0.03286
```

```
summary(model15)
```

```
Call:
lm(formula = combination_value ~ treatment + agea, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-2.4369 -1.2564 -0.2643  0.7122  4.7373

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)    4.0994684  0.0511269  80.182  < 2e-16 ***
treatmentTRUE -0.0211490  0.0354637  -0.596    0.551
agea           0.0039237  0.0008864   4.427 9.69e-06 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.388 on 9227 degrees of freedom
Multiple R-squared:  0.002135,  Adjusted R-squared:  0.001919
F-statistic:  9.87 on 2 and 9227 DF,  p-value: 5.224e-05
```

```
# Model 6: treatment + region
model16 <- lm(perception_immigrants ~ treatment + region, data = swedish_data)
model17 <- lm(perception_refugees ~ treatment + region, data = swedish_data)
model18 <- lm(combination_value ~ treatment + region, data = swedish_data)

# Print summaries
summary(model16)
```

```
Call:
lm(formula = perception_immigrants ~ treatment + region, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-1.0017 -0.6484  0.1744  0.3516  2.4252

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
```

```
(Intercept)    1.648356   0.015537 106.094  < 2e-16 ***
treatmentTRUE  0.002189   0.016186   0.135  0.89240
regionSE121    0.138780   0.044820   3.096  0.00196 **
regionSE122    0.180327   0.040749   4.425 9.74e-06 ***
regionSE123   -0.007371   0.032098  -0.230  0.81838
regionSE124    0.116973   0.040444   2.892  0.00383 **
regionSE125    0.068559   0.044473   1.542  0.12321
regionSE211    0.120956   0.055882   2.164  0.03045 *
regionSE212   -0.368794   0.074782  -4.932 8.30e-07 ***
regionSE213    0.029707   0.061810   0.481  0.63080
regionSE214    0.068398   0.023636   2.894  0.00382 **
regionSE221    0.305908   0.043408   7.047 1.96e-12 ***
regionSE224    0.177294   0.022201   7.986 1.56e-15 ***
regionSE231    0.042902   0.042649   1.006  0.31447
regionSE232   -0.073561   0.037625  -1.955  0.05060 .
regionSE311   -0.195801   0.049511  -3.955 7.72e-05 ***
regionSE312    0.351160   0.039453   8.901  < 2e-16 ***
regionSE313    0.107872   0.037717   2.860  0.00425 **
regionSE321    0.084495   0.037348   2.262  0.02370 *
regionSE322    0.249097   0.044055   5.654 1.61e-08 ***
regionSE331   -0.091155   0.036158  -2.521  0.01172 *
regionSE332   -0.109754   0.041526  -2.643  0.00823 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6342 on 9208 degrees of freedom
Multiple R-squared:  0.0347,    Adjusted R-squared:  0.0325
F-statistic: 15.76 on 21 and 9208 DF,  p-value: < 2.2e-16
```

```
summary(model17)
```

```
Call:
lm(formula = perception_refugees ~ treatment + region, data = swedish_data)

Residuals:
     Min       1Q   Median       3Q      Max
-2.03701 -0.60565 -0.03701  0.56635  2.60117

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)    2.433652   0.022834 106.582  < 2e-16 ***
treatmentTRUE -0.015473   0.023787  -0.650 0.515405
regionSE121   -0.009943   0.065870  -0.151 0.880018
regionSE122    0.541403   0.059887   9.040  < 2e-16 ***
regionSE123    0.318527   0.047173   6.752 1.54e-11 ***
regionSE124    0.495789   0.059438   8.341  < 2e-16 ***
regionSE125   -0.247679   0.065360  -3.789 0.000152 ***
regionSE211   -0.192902   0.082128  -2.349 0.018855 *
regionSE212   -0.270557   0.109904  -2.462 0.013844 *
regionSE213   -0.019346   0.090840  -0.213 0.831360
regionSE214    0.262218   0.034737   7.549 4.82e-14 ***
regionSE221    0.717807   0.063795  11.252  < 2e-16 ***
```

```
regionSE224    0.172000   0.032628   5.272 1.38e-07 ***
regionSE231    0.150495   0.062679   2.401 0.016368 *
regionSE232   -0.309695   0.055296  -5.601 2.20e-08 ***
regionSE311   -0.082166   0.072764  -1.129 0.258836
regionSE312    0.520265   0.057982   8.973  < 2e-16 ***
regionSE313    0.302454   0.055432   5.456 4.99e-08 ***
regionSE321    0.045119   0.054889   0.822 0.411094
regionSE322    0.603354   0.064745   9.319  < 2e-16 ***
regionSE331    0.167315   0.053140   3.149 0.001646 **
regionSE332   -0.088596   0.061029  -1.452 0.146619
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9321 on 9208 degrees of freedom
Multiple R-squared:  0.05863,   Adjusted R-squared:  0.05649
F-statistic: 27.31 on 21 and 9208 DF,  p-value: < 2.2e-16
```

```
summary(model18)
```

```
Call:
lm(formula = combination_value ~ treatment + region, data = swedish_data)

Residuals:
   Min     1Q Median     3Q    Max
-2.953 -1.082 -0.082  0.918  4.314

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)    4.08201    0.03314 123.172  < 2e-16 ***
treatmentTRUE -0.01328    0.03452  -0.385   0.7004
regionSE121    0.12884    0.09560   1.348   0.1778
regionSE122    0.72173    0.08692   8.303  < 2e-16 ***
regionSE123    0.31116    0.06847   4.545 5.57e-06 ***
regionSE124    0.61276    0.08627   7.103 1.31e-12 ***
regionSE125   -0.17912    0.09486  -1.888   0.0590 .
regionSE211   -0.07195    0.11920  -0.604   0.5461
regionSE212   -0.63935    0.15951  -4.008 6.17e-05 ***
regionSE213    0.01036    0.13184   0.079   0.9374
regionSE214    0.33062    0.05042   6.558 5.76e-11 ***
regionSE221    1.02372    0.09259  11.056  < 2e-16 ***
regionSE224    0.34929    0.04736   7.376 1.77e-13 ***
regionSE231    0.19340    0.09097   2.126   0.0335 *
regionSE232   -0.38326    0.08026  -4.775 1.82e-06 ***
regionSE311   -0.27797    0.10561  -2.632   0.0085 **
regionSE312    0.87142    0.08415  10.355  < 2e-16 ***
regionSE313    0.41033    0.08045   5.100 3.46e-07 ***
regionSE321    0.12961    0.07967   1.627   0.1038
regionSE322    0.85245    0.09397   9.071  < 2e-16 ***
regionSE331    0.07616    0.07713   0.987   0.3235
regionSE332   -0.19835    0.08858  -2.239   0.0252 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Residual standard error: 1.353 on 9208 degrees of freedom
Multiple R-squared:  0.05453,   Adjusted R-squared:  0.05237
F-statistic: 25.29 on 21 and 9208 DF,  p-value: < 2.2e-16
```

```
# Model 7: treatment + time_centered
model19 <- lm(perception_immigrants ~ treatment + time_centered, data = swedish_data)
model20 <- lm(perception_refugees ~ treatment + time_centered, data = swedish_data)
model21 <- lm(combination_value ~ treatment + time_centered, data = swedish_data)

# Print summaries
summary(model19)
```

```
Call:
lm(formula = perception_immigrants ~ treatment + time_centered,
    data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-0.7241 -0.7202  0.2796  0.2798  2.2801

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)    1.720e+00  1.632e-02 105.382   <2e-16 ***
treatmentTRUE  4.269e-03  3.469e-02   0.123    0.902
time_centered -2.756e-06  1.104e-04  -0.025    0.980
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6449 on 9227 degrees of freedom
Multiple R-squared:  4.992e-06, Adjusted R-squared:  -0.0002118
F-statistic: 0.02303 on 2 and 9227 DF,  p-value: 0.9772
```

```
summary(model20)
```

```
Call:
lm(formula = perception_refugees ~ treatment + time_centered,
    data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-1.6052 -0.5959  0.3964  0.4148  2.4374

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)    2.5782062  0.0242861 106.160   <2e-16 ***
treatmentTRUE  0.0159575  0.0516176   0.309    0.757
time_centered -0.0001194  0.0001643  -0.727    0.467
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Residual standard error: 0.9596 on 9227 degrees of freedom
Multiple R-squared:  0.0001099, Adjusted R-squared:  -0.0001069
F-statistic: 0.5069 on 2 and 9227 DF,  p-value: 0.6024
```

```
summary(model21)
```

```
Call:
lm(formula = combination_value ~ treatment + time_centered, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-2.3256 -1.3035 -0.3064  0.6933  4.7061

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)    4.2980155  0.0351733 122.195   <2e-16 ***
treatmentTRUE  0.0202267  0.0747571   0.271    0.787
time_centered -0.0001222  0.0002380  -0.513    0.608
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.39 on 9227 degrees of freedom
Multiple R-squared:  4.44e-05,  Adjusted R-squared:  -0.0001723
F-statistic: 0.2048 on 2 and 9227 DF,  p-value: 0.8148
```

```
# Model 8: agea + region
model22 <- lm(perception_immigrants ~ agea + region, data = swedish_data)
model23 <- lm(perception_refugees ~ agea + region, data = swedish_data)
model24 <- lm(combination_value ~ agea + region, data = swedish_data)

# Print summaries
summary(model22)
```

```
Call:
lm(formula = perception_immigrants ~ agea + region, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-1.0791 -0.6255  0.1618  0.3283  2.3321

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.3415111  0.0268965  49.877  < 2e-16 ***
agea         0.0055971  0.0004069  13.756  < 2e-16 ***
regionSE121  0.1413075  0.0443666   3.185  0.00145 **
regionSE122  0.1978384  0.0403561   4.902 9.63e-07 ***
regionSE123  0.0124774  0.0318053   0.392  0.69484
regionSE124  0.1227648  0.0400332   3.067  0.00217 **
regionSE125  0.0230952  0.0441469   0.523  0.60089
regionSE211  0.0907986  0.0553602   1.640  0.10101
regionSE212 -0.4253199  0.0741386  -5.737 9.95e-09 ***
```

```
regionSE213 -0.0132056  0.0612640  -0.216  0.82934
regionSE214  0.0656755  0.0233975   2.807  0.00501 **
regionSE221  0.3122241  0.0429716   7.266 4.01e-13 ***
regionSE224  0.1827966  0.0219800   8.316  < 2e-16 ***
regionSE231  0.0695613  0.0422611   1.646  0.09980 .
regionSE232 -0.0597970  0.0372562  -1.605  0.10852
regionSE311 -0.2081541  0.0490180  -4.246 2.19e-05 ***
regionSE312  0.3342105  0.0390727   8.554  < 2e-16 ***
regionSE313  0.0977940  0.0373423   2.619  0.00884 **
regionSE321  0.0439610  0.0370875   1.185  0.23592
regionSE322  0.2382578  0.0436140   5.463 4.81e-08 ***
regionSE331 -0.0817899  0.0357981  -2.285  0.02235 *
regionSE332 -0.0991633  0.0411117  -2.412  0.01588 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6278 on 9208 degrees of freedom
Multiple R-squared:  0.05414,   Adjusted R-squared:  0.05198
F-statistic:  25.1 on 21 and 9208 DF,  p-value: < 2.2e-16
```

```
summary(model23)
```

```
Call:
lm(formula = perception_refugees ~ agea + region, data = swedish_data)

Residuals:
     Min       1Q   Median       3Q      Max
-2.02144 -0.63100 -0.06164  0.57268  2.59565

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  2.482826   0.039928  62.182  < 2e-16 ***
agea        -0.000957   0.000604  -1.584 0.113132
regionSE121 -0.010358   0.065863  -0.157 0.875044
regionSE122  0.538261   0.059909   8.985  < 2e-16 ***
regionSE123  0.315327   0.047215   6.678 2.55e-11 ***
regionSE124  0.495292   0.059430   8.334  < 2e-16 ***
regionSE125 -0.239897   0.065536  -3.661 0.000253 ***
regionSE211 -0.187713   0.082183  -2.284 0.022389 *
regionSE212 -0.260621   0.110060  -2.368 0.017905 *
regionSE213 -0.012222   0.090947  -0.134 0.893101
regionSE214  0.262806   0.034734   7.566 4.21e-14 ***
regionSE221  0.716788   0.063792  11.236  < 2e-16 ***
regionSE224  0.171141   0.032629   5.245 1.60e-07 ***
regionSE231  0.146184   0.062737   2.330 0.019822 *
regionSE232 -0.311697   0.055307  -5.636 1.79e-08 ***
regionSE311 -0.080099   0.072768  -1.101 0.271033
regionSE312  0.523115   0.058004   9.019  < 2e-16 ***
regionSE313  0.304377   0.055435   5.491 4.11e-08 ***
regionSE321  0.052015   0.055057   0.945 0.344811
regionSE322  0.605607   0.064745   9.354  < 2e-16 ***
regionSE331  0.165969   0.053143   3.123 0.001795 **
```

```
regionSE332 -0.090090   0.061031  -1.476 0.139940
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.932 on 9208 degrees of freedom
Multiple R-squared:  0.05885,   Adjusted R-squared:  0.0567
F-statistic: 27.42 on 21 and 9208 DF,  p-value: < 2.2e-16
```

```
summary(model24)
```

```
Call:
lm(formula = combination_value ~ agea + region, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-2.9930 -1.0703 -0.1034  0.8833  4.2270

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  3.8243366  0.0578704  66.085  < 2e-16 ***
agea         0.0046401  0.0008754   5.300 1.18e-07 ***
regionSE121  0.1309500  0.0954588   1.372  0.17016
regionSE122  0.7360993  0.0868299   8.477  < 2e-16 ***
regionSE123  0.3278040  0.0684321   4.790 1.69e-06 ***
regionSE124  0.6180568  0.0861352   7.175 7.77e-13 ***
regionSE125 -0.2168017  0.0949861  -2.282  0.02249 *
regionSE211 -0.0969147  0.1191125  -0.814  0.41587
regionSE212 -0.6859406  0.1595160  -4.300 1.72e-05 ***
regionSE213 -0.0254276  0.1318151  -0.193  0.84704
regionSE214  0.3284819  0.0503419   6.525 7.16e-11 ***
regionSE221  1.0290119  0.0924574  11.130  < 2e-16 ***
regionSE224  0.3539371  0.0472920   7.484 7.87e-14 ***
regionSE231  0.2157457  0.0909287   2.373  0.01768 *
regionSE232 -0.3714940  0.0801602  -4.634 3.63e-06 ***
regionSE311 -0.2882534  0.1054667  -2.733  0.00629 **
regionSE312  0.8573259  0.0840685  10.198  < 2e-16 ***
regionSE313  0.4021710  0.0803455   5.006 5.67e-07 ***
regionSE321  0.0959759  0.0797971   1.203  0.22910
regionSE322  0.8438649  0.0938395   8.993  < 2e-16 ***
regionSE331  0.0841788  0.0770228   1.093  0.27446
regionSE332 -0.1892534  0.0884556  -2.140  0.03242 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.351 on 9208 degrees of freedom
Multiple R-squared:  0.05739,   Adjusted R-squared:  0.05524
F-statistic:  26.7 on 21 and 9208 DF,  p-value: < 2.2e-16
```

```
# Model 9: agea + time_centered
model25 <- lm(perception_immigrants ~ agea + time_centered, data = swedish_data)
model26 <- lm(perception_refugees ~ agea + time_centered, data = swedish_data)
model27 <- lm(combination_value ~ agea + time_centered, data = swedish_data)
```

```
# Print summaries
summary(model25)
```

```
Call:
lm(formula = perception_immigrants ~ agea + time_centered, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max 
-0.9127 -0.6580  0.2022  0.3167  2.3693 

Coefficients:
                Estimate Std. Error t value Pr(>|t|)    
(Intercept)    1.419e+00  2.380e-02  59.636   <2e-16 ***
agea           5.460e-03  4.074e-04  13.402   <2e-16 ***
time_centered -8.848e-06  5.189e-05  -0.171    0.865    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6387 on 9227 degrees of freedom
Multiple R-squared:  0.0191,    Adjusted R-squared:  0.01888 
F-statistic: 89.82 on 2 and 9227 DF,  p-value: < 2.2e-16
```

```
summary(model26)
```

```
Call:
lm(formula = perception_refugees ~ agea + time_centered, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max 
-1.6522 -0.6005  0.3573  0.4307  2.4757 

Coefficients:
                Estimate Std. Error t value Pr(>|t|)    
(Intercept)    2.670e+00  3.575e-02  74.691   <2e-16 ***
agea          -1.546e-03  6.119e-04  -2.526   0.0115 *  
time_centered -6.958e-05  7.795e-05  -0.893   0.3721    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9593 on 9227 degrees of freedom
Multiple R-squared:  0.0007906, Adjusted R-squared:  0.000574 
F-statistic:  3.65 on 2 and 9227 DF,  p-value: 0.02602
```

```
summary(model27)
```

```
Call:
lm(formula = combination_value ~ agea + time_centered, data = swedish_data)

Residuals:
```

```
    Min      1Q  Median      3Q     Max 
-2.4423 -1.2548 -0.2640  0.7118  4.7418 

Coefficients:
                Estimate Std. Error t value Pr(>|t|)    
(Intercept)    4.090e+00  5.174e-02  79.042   <2e-16 ***
agea           3.914e-03  8.856e-04   4.419    1e-05 ***
time_centered -7.843e-05  1.128e-04  -0.695    0.487    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.388 on 9227 degrees of freedom
Multiple R-squared:  0.002149,  Adjusted R-squared:  0.001932 
F-statistic: 9.934 on 2 and 9227 DF,  p-value: 4.901e-05
```

```r
# Model 10: region + time_centered
model28 <- lm(perception_immigrants ~ region + time_centered, data = swedish_data)
model29 <- lm(perception_refugees ~ region + time_centered, data = swedish_data)
model30 <- lm(combination_value ~ region + time_centered, data = swedish_data)

# Print summaries
summary(model28)
```

```
Call:
lm(formula = perception_immigrants ~ region + time_centered, 
    data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max 
-1.0024 -0.6484  0.1744  0.3511  2.4257 

Coefficients:
                Estimate Std. Error t value Pr(>|t|)    
(Intercept)    1.649e+00  1.554e-02 106.157  < 2e-16 ***
regionSE121    1.388e-01  4.482e-02   3.097  0.00196 ** 
regionSE122    1.803e-01  4.075e-02   4.426 9.72e-06 ***
regionSE123   -7.354e-03  3.210e-02  -0.229  0.81878    
regionSE124    1.170e-01  4.044e-02   2.892  0.00383 ** 
regionSE125    6.861e-02  4.447e-02   1.543  0.12293    
regionSE211    1.209e-01  5.588e-02   2.164  0.03049 *  
regionSE212   -3.688e-01  7.478e-02  -4.932 8.30e-07 ***
regionSE213    2.971e-02  6.181e-02   0.481  0.63077    
regionSE214    6.842e-02  2.364e-02   2.895  0.00380 ** 
regionSE221    3.059e-01  4.341e-02   7.048 1.95e-12 ***
regionSE224    1.773e-01  2.220e-02   7.986 1.56e-15 ***
regionSE231    4.293e-02  4.265e-02   1.007  0.31416    
regionSE232   -7.354e-02  3.763e-02  -1.955  0.05066 .  
regionSE311   -1.958e-01  4.951e-02  -3.955 7.72e-05 ***
regionSE312    3.512e-01  3.945e-02   8.901  < 2e-16 ***
regionSE313    1.079e-01  3.772e-02   2.861  0.00424 ** 
regionSE321    8.452e-02  3.735e-02   2.263  0.02366 *  
regionSE322    2.492e-01  4.406e-02   5.655 1.61e-08 ***
```

```
regionSE331   -9.114e-02  3.616e-02  -2.521  0.01173 *
regionSE332   -1.097e-01  4.153e-02  -2.642  0.00826 **
time_centered  7.615e-06  5.154e-05   0.148  0.88255
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6342 on 9208 degrees of freedom
Multiple R-squared:  0.0347,    Adjusted R-squared:  0.0325
F-statistic: 15.76 on 21 and 9208 DF,  p-value: < 2.2e-16
```

```
summary(model29)
```

```
Call:
lm(formula = perception_refugees ~ region + time_centered, data = swedish_data)

Residuals:
     Min       1Q   Median       3Q      Max
-2.04231 -0.61144 -0.04234  0.56801  2.60749

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)    2.426e+00  2.283e-02 106.241  < 2e-16 ***
regionSE121   -1.015e-02  6.587e-02  -0.154 0.877546
regionSE122    5.413e-01  5.989e-02   9.039  < 2e-16 ***
regionSE123    3.183e-01  4.717e-02   6.749 1.58e-11 ***
regionSE124    4.957e-01  5.944e-02   8.340  < 2e-16 ***
regionSE125   -2.481e-01  6.536e-02  -3.796 0.000148 ***
regionSE211   -1.927e-01  8.213e-02  -2.346 0.018982 *
regionSE212   -2.706e-01  1.099e-01  -2.462 0.013824 *
regionSE213   -1.932e-02  9.084e-02  -0.213 0.831581
regionSE214    2.620e-01  3.474e-02   7.541 5.10e-14 ***
regionSE221    7.176e-01  6.380e-02  11.248  < 2e-16 ***
regionSE224    1.719e-01  3.263e-02   5.267 1.42e-07 ***
regionSE231    1.502e-01  6.268e-02   2.396 0.016581 *
regionSE232   -3.099e-01  5.530e-02  -5.604 2.15e-08 ***
regionSE311   -8.219e-02  7.276e-02  -1.130 0.258667
regionSE312    5.202e-01  5.798e-02   8.973  < 2e-16 ***
regionSE313    3.021e-01  5.543e-02   5.451 5.15e-08 ***
regionSE321    4.492e-02  5.489e-02   0.818 0.413158
regionSE322    6.028e-01  6.475e-02   9.309  < 2e-16 ***
regionSE331    1.672e-01  5.314e-02   3.146 0.001663 **
regionSE332   -8.904e-02  6.103e-02  -1.459 0.144609
time_centered -6.441e-05  7.574e-05  -0.850 0.395118
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9321 on 9208 degrees of freedom
Multiple R-squared:  0.05866,   Adjusted R-squared:  0.05652
F-statistic: 27.33 on 21 and 9208 DF,  p-value: < 2.2e-16
```

```
summary(model30)
```

```
Call:
lm(formula = combination_value ~ region + time_centered, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-2.9574 -1.0829 -0.0836  0.9140  4.3205

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)    4.0752229  0.0331408 122.967  < 2e-16 ***
regionSE121    0.1286545  0.0956028   1.346   0.1784
regionSE122    0.7216211  0.0869179   8.302  < 2e-16 ***
regionSE123    0.3109942  0.0684677   4.542 5.64e-06 ***
regionSE124    0.6126734  0.0862663   7.102 1.32e-12 ***
regionSE125   -0.1795176  0.0948659  -1.892   0.0585 .
regionSE211   -0.0717638  0.1191992  -0.602   0.5472
regionSE212   -0.6394025  0.1595126  -4.008 6.16e-05 ***
regionSE213    0.0103897  0.1318433   0.079   0.9372
regionSE214    0.3303920  0.0504202   6.553 5.95e-11 ***
regionSE221    1.0235225  0.0925929  11.054  < 2e-16 ***
regionSE224    0.3491734  0.0473570   7.373 1.81e-13 ***
regionSE231    0.1931325  0.0909747   2.123   0.0338 *
regionSE232   -0.3834516  0.0802579  -4.778 1.80e-06 ***
regionSE311   -0.2779906  0.1056082  -2.632   0.0085 **
regionSE312    0.8714020  0.0841536  10.355  < 2e-16 ***
regionSE313    0.4100437  0.0804563   5.096 3.53e-07 ***
regionSE321    0.1294393  0.0796654   1.625   0.1042
regionSE322    0.8519372  0.0939810   9.065  < 2e-16 ***
regionSE331    0.0760160  0.0771283   0.986   0.3244
regionSE332   -0.1987529  0.0885833  -2.244   0.0249 *
time_centered -0.0000568  0.0001099  -0.517   0.6054
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.353 on 9208 degrees of freedom
Multiple R-squared:  0.05454,   Adjusted R-squared:  0.05238
F-statistic: 25.29 on 21 and 9208 DF,  p-value: < 2.2e-16
```

```r
# None of the models are significant, reaffirms conclusions of the original models. Al

#Models with 3 variables
# Model 11: treatment + agea + region
model31 <- lm(perception_immigrants ~ treatment + agea + region, data = swedish_data)
model32 <- lm(perception_refugees ~ treatment + agea + region, data = swedish_data)
model33 <- lm(combination_value ~ treatment + agea + region, data = swedish_data)

# Print summaries
summary(model31)
```

```
Call:
lm(formula = perception_immigrants ~ treatment + agea + region,
```

```
    data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-1.0811 -0.6226  0.1605  0.3273  2.3386

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)    1.3427755  0.0270071  49.719  < 2e-16 ***
treatmentTRUE -0.0083502  0.0160408  -0.521  0.60268
agea           0.0056072  0.0004074  13.765  < 2e-16 ***
regionSE121    0.1413023  0.0443683   3.185  0.00145 **
regionSE122    0.1979516  0.0403583   4.905 9.51e-07 ***
regionSE123    0.0124064  0.0318069   0.390  0.69650
regionSE124    0.1225026  0.0400380   3.060  0.00222 **
regionSE125    0.0230080  0.0441490   0.521  0.60228
regionSE211    0.0907261  0.0553625   1.639  0.10130
regionSE212   -0.4255722  0.0741431  -5.740 9.77e-09 ***
regionSE213   -0.0131650  0.0612664  -0.215  0.82986
regionSE214    0.0656025  0.0233989   2.804  0.00506 **
regionSE221    0.3122022  0.0429733   7.265 4.03e-13 ***
regionSE224    0.1827616  0.0219810   8.315  < 2e-16 ***
regionSE231    0.0694726  0.0422631   1.644  0.10025
regionSE232   -0.0599665  0.0372591  -1.609  0.10755
regionSE311   -0.2081514  0.0490199  -4.246 2.20e-05 ***
regionSE312    0.3342060  0.0390742   8.553  < 2e-16 ***
regionSE313    0.0976653  0.0373446   2.615  0.00893 **
regionSE321    0.0439069  0.0370891   1.184  0.23651
regionSE322    0.2380170  0.0436182   5.457 4.97e-08 ***
regionSE331   -0.0819141  0.0358003  -2.288  0.02216 *
regionSE332   -0.0993191  0.0411144  -2.416  0.01573 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6278 on 9207 degrees of freedom
Multiple R-squared:  0.05417,   Adjusted R-squared:  0.05191
F-statistic: 23.97 on 22 and 9207 DF,  p-value: < 2.2e-16
```

```
summary(model32)
```

```
Call:
lm(formula = perception_refugees ~ treatment + agea + region,
    data = swedish_data)

Residuals:
     Min       1Q   Median       3Q      Max
-2.02429 -0.63153 -0.06378  0.57152  2.60592

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)    2.4849009  0.0400921  61.980  < 2e-16 ***
treatmentTRUE -0.0137053  0.0238126  -0.576 0.564934
```

```
agea          -0.0009404  0.0006047  -1.555 0.119960
regionSE121   -0.0103660  0.0658650  -0.157 0.874946
regionSE122    0.5384467  0.0599121   8.987  < 2e-16 ***
regionSE123    0.3152101  0.0472175   6.676 2.60e-11 ***
regionSE124    0.4948616  0.0594366   8.326  < 2e-16 ***
regionSE125   -0.2400399  0.0655394  -3.663 0.000251 ***
regionSE211   -0.1878324  0.0821860  -2.285 0.022309 *
regionSE212   -0.2610348  0.1100658  -2.372 0.017731 *
regionSE213   -0.0121554  0.0909504  -0.134 0.893683
regionSE214    0.2626868  0.0347357   7.562 4.34e-14 ***
regionSE221    0.7167519  0.0637941  11.235  < 2e-16 ***
regionSE224    0.1710830  0.0326309   5.243 1.62e-07 ***
regionSE231    0.1460388  0.0627399   2.328 0.019950 *
regionSE232   -0.3119753  0.0553113  -5.640 1.75e-08 ***
regionSE311   -0.0800948  0.0727704  -1.101 0.271077
regionSE312    0.5231080  0.0580059   9.018  < 2e-16 ***
regionSE313    0.3041658  0.0554383   5.487 4.21e-08 ***
regionSE321    0.0519262  0.0550589   0.943 0.345654
regionSE322    0.6052119  0.0647514   9.347  < 2e-16 ***
regionSE331    0.1657648  0.0531457   3.119 0.001820 **
regionSE332   -0.0903458  0.0610346  -1.480 0.138844
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.932 on 9207 degrees of freedom
Multiple R-squared:  0.05888,   Adjusted R-squared:  0.05663
F-statistic: 26.18 on 22 and 9207 DF,  p-value: < 2.2e-16
```

```
summary(model33)
```

```
Call:
lm(formula = combination_value ~ treatment + agea + region, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-2.9976 -1.0610 -0.1057  0.8783  4.2443

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)    3.8276764  0.0581078  65.872  < 2e-16 ***
treatmentTRUE -0.0220556  0.0345129  -0.639  0.52280
agea           0.0046668  0.0008764   5.325 1.04e-07 ***
regionSE121    0.1309363  0.0954618   1.372  0.17022
regionSE122    0.7363983  0.0868340   8.481  < 2e-16 ***
regionSE123    0.3276165  0.0684349   4.787 1.72e-06 ***
regionSE124    0.6173642  0.0861448   7.167 8.28e-13 ***
regionSE125   -0.2170319  0.0949899  -2.285  0.02235 *
regionSE211   -0.0971063  0.1191167  -0.815  0.41497
regionSE212   -0.6866071  0.1595245  -4.304 1.69e-05 ***
regionSE213   -0.0253204  0.1318194  -0.192  0.84768
regionSE214    0.3282893  0.0503444   6.521 7.36e-11 ***
regionSE221    1.0289540  0.0924604  11.129  < 2e-16 ***
```

```
regionSE224    0.3538446  0.0472938   7.482 8.00e-14 ***
regionSE231    0.2155114  0.0909324   2.370  0.01781 *
regionSE232   -0.3719418  0.0801658  -4.640 3.54e-06 ***
regionSE311   -0.2882461  0.1054701  -2.733  0.00629 **
regionSE312    0.8573141  0.0840712  10.197  < 2e-16 ***
regionSE313    0.4018311  0.0803498   5.001 5.81e-07 ***
regionSE321    0.0958331  0.0798000   1.201  0.22981
regionSE322    0.8432290  0.0938478   8.985  < 2e-16 ***
regionSE331    0.0838507  0.0770270   1.089  0.27636
regionSE332   -0.1896649  0.0884608  -2.144  0.03205 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.351 on 9207 degrees of freedom
Multiple R-squared:  0.05743,   Adjusted R-squared:  0.05518
F-statistic:  25.5 on 22 and 9207 DF,  p-value: < 2.2e-16
```

```
# Model 12: treatment + agea + time_centered
model34 <- lm(perception_immigrants ~ treatment + agea + time_centered, data = swedish
model35 <- lm(perception_refugees ~ treatment + agea + time_centered, data = swedish_d
model36 <- lm(combination_value ~ treatment + agea + time_centered, data = swedish_dat

# Print summaries
summary(model34)
```

```
Call:
lm(formula = perception_immigrants ~ treatment + agea + time_centered,
    data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-0.9198 -0.6584  0.2021  0.3152  2.3701

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)    1.427e+00  2.715e-02  52.579   <2e-16 ***
treatmentTRUE -2.056e-02  3.440e-02  -0.597    0.550
agea           5.473e-03  4.080e-04  13.414   <2e-16 ***
time_centered  4.872e-05  1.094e-04   0.445    0.656
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6387 on 9226 degrees of freedom
Multiple R-squared:  0.01913,   Adjusted R-squared:  0.01882
F-statistic: 59.99 on 3 and 9226 DF,  p-value: < 2.2e-16
```

```
summary(model35)
```

```
Call:
lm(formula = perception_refugees ~ treatment + agea + time_centered,
    data = swedish_data)
```

```
Residuals:
    Min      1Q  Median      3Q     Max 
-1.6565 -0.6001  0.3555  0.4309  2.4762 

Coefficients:
                Estimate Std. Error t value Pr(>|t|)    
(Intercept)    2.6616204  0.0407739  65.278   <2e-16 ***
treatmentTRUE  0.0230362  0.0516771   0.446   0.6558    
agea          -0.0015606  0.0006129  -2.546   0.0109 *  
time_centered -0.0001341  0.0001644  -0.816   0.4147    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9594 on 9226 degrees of freedom
Multiple R-squared:  0.0008121, Adjusted R-squared:  0.0004872 
F-statistic:   2.5 on 3 and 9226 DF,  p-value: 0.05766
```

```
summary(model36)
```

```
Call:
lm(formula = combination_value ~ treatment + agea + time_centered, 
    data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max 
-2.4426 -1.2548 -0.2637  0.7118  4.7417 

Coefficients:
                Estimate Std. Error t value Pr(>|t|)    
(Intercept)    4.089e+00  5.901e-02  69.291  < 2e-16 ***
treatmentTRUE  2.480e-03  7.479e-02   0.033    0.974    
agea           3.912e-03  8.870e-04   4.411 1.04e-05 ***
time_centered -8.537e-05  2.379e-04  -0.359    0.720    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.388 on 9226 degrees of freedom
Multiple R-squared:  0.002149,  Adjusted R-squared:  0.001824 
F-statistic: 6.622 on 3 and 9226 DF,  p-value: 0.0001826
```

```
# Model 13: treatment + region + time_centered
model37 <- lm(perception_immigrants ~ treatment + region + time_centered, data = swedi
model38 <- lm(perception_refugees ~ treatment + region + time_centered, data = swedish
model39 <- lm(combination_value ~ treatment + region + time_centered, data = swedish_d

# Print summaries
summary(model37)
```

```
Call:
lm(formula = perception_immigrants ~ treatment + region + time_centered,
```

```
    data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max 
-1.0023 -0.6484  0.1744  0.3512  2.4256 

Coefficients:
                Estimate Std. Error t value Pr(>|t|)    
(Intercept)    1.649e+00  2.091e-02  78.877  < 2e-16 ***
treatmentTRUE  3.740e-04  3.413e-02   0.011  0.99126    
regionSE121    1.388e-01  4.482e-02   3.097  0.00196 ** 
regionSE122    1.803e-01  4.075e-02   4.425 9.74e-06 ***
regionSE123   -7.356e-03  3.210e-02  -0.229  0.81876    
regionSE124    1.170e-01  4.045e-02   2.892  0.00384 ** 
regionSE125    6.861e-02  4.448e-02   1.542  0.12303    
regionSE211    1.209e-01  5.589e-02   2.164  0.03050 *  
regionSE212   -3.688e-01  7.479e-02  -4.931 8.31e-07 ***
regionSE213    2.971e-02  6.181e-02   0.481  0.63081    
regionSE214    6.842e-02  2.364e-02   2.894  0.00381 ** 
regionSE221    3.059e-01  4.341e-02   7.047 1.96e-12 ***
regionSE224    1.773e-01  2.220e-02   7.986 1.57e-15 ***
regionSE231    4.293e-02  4.265e-02   1.006  0.31423    
regionSE232   -7.354e-02  3.763e-02  -1.955  0.05067 .  
regionSE311   -1.958e-01  4.951e-02  -3.954 7.73e-05 ***
regionSE312    3.512e-01  3.945e-02   8.900  < 2e-16 ***
regionSE313    1.079e-01  3.772e-02   2.860  0.00424 ** 
regionSE321    8.452e-02  3.735e-02   2.263  0.02368 *  
regionSE322    2.491e-01  4.407e-02   5.654 1.61e-08 ***
regionSE331   -9.114e-02  3.616e-02  -2.521  0.01174 *  
regionSE332   -1.097e-01  4.153e-02  -2.642  0.00827 ** 
time_centered  6.566e-06  1.087e-04   0.060  0.95182    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6343 on 9207 degrees of freedom
Multiple R-squared:  0.0347,    Adjusted R-squared:  0.0324 
F-statistic: 15.04 on 22 and 9207 DF,  p-value: < 2.2e-16
```

```
summary(model38)
```

```
Call:
lm(formula = perception_refugees ~ treatment + region + time_centered, 
    data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max 
-2.0440 -0.6133 -0.0441  0.5685  2.6077 

Coefficients:
                Estimate Std. Error t value Pr(>|t|)    
(Intercept)    2.422e+00  3.073e-02  78.808  < 2e-16 ***
treatmentTRUE  1.038e-02  5.016e-02   0.207 0.835978    
```

```
regionSE121   -1.024e-02  6.587e-02  -0.155 0.876486
regionSE122    5.412e-01  5.989e-02   9.036  < 2e-16 ***
regionSE123    3.183e-01  4.718e-02   6.747 1.60e-11 ***
regionSE124    4.958e-01  5.944e-02   8.341  < 2e-16 ***
regionSE125   -2.483e-01  6.537e-02  -3.799 0.000146 ***
regionSE211   -1.926e-01  8.213e-02  -2.345 0.019053 *
regionSE212   -2.706e-01  1.099e-01  -2.462 0.013843 *
regionSE213   -1.936e-02  9.084e-02  -0.213 0.831278
regionSE214    2.619e-01  3.474e-02   7.538 5.24e-14 ***
regionSE221    7.175e-01  6.380e-02  11.246  < 2e-16 ***
regionSE224    1.718e-01  3.263e-02   5.266 1.43e-07 ***
regionSE231    1.501e-01  6.268e-02   2.395 0.016644 *
regionSE232   -3.099e-01  5.530e-02  -5.604 2.15e-08 ***
regionSE311   -8.222e-02  7.277e-02  -1.130 0.258561
regionSE312    5.202e-01  5.798e-02   8.972  < 2e-16 ***
regionSE313    3.020e-01  5.544e-02   5.448 5.22e-08 ***
regionSE321    4.482e-02  5.489e-02   0.817 0.414218
regionSE322    6.026e-01  6.476e-02   9.305  < 2e-16 ***
regionSE331    1.671e-01  5.314e-02   3.145 0.001665 **
regionSE332   -8.918e-02  6.104e-02  -1.461 0.144058
time_centered -9.353e-05  1.597e-04  -0.586 0.558168
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9321 on 9207 degrees of freedom
Multiple R-squared:  0.05867,   Adjusted R-squared:  0.05642
F-statistic: 26.08 on 22 and 9207 DF,  p-value: < 2.2e-16
```

```
summary(model39)
```

```
Call:
lm(formula = combination_value ~ treatment + region + time_centered,
    data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-2.9586 -1.0825 -0.0837  0.9127  4.3207

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)    4.071e+00  4.460e-02  91.277  < 2e-16 ***
treatmentTRUE  1.076e-02  7.280e-02   0.148  0.88251
regionSE121    1.286e-01  9.561e-02   1.345  0.17877
regionSE122    7.215e-01  8.692e-02   8.301  < 2e-16 ***
regionSE123    3.110e-01  6.847e-02   4.541 5.66e-06 ***
regionSE124    6.127e-01  8.627e-02   7.102 1.32e-12 ***
regionSE125   -1.797e-01  9.488e-02  -1.894  0.05823 .
regionSE211   -7.166e-02  1.192e-01  -0.601  0.54777
regionSE212   -6.394e-01  1.595e-01  -4.008 6.17e-05 ***
regionSE213    1.035e-02  1.319e-01   0.079  0.93742
regionSE214    3.303e-01  5.043e-02   6.550 6.05e-11 ***
regionSE221    1.023e+00  9.260e-02  11.052  < 2e-16 ***
```

```
regionSE224    3.491e-01  4.736e-02   7.372 1.83e-13 ***
regionSE231    1.931e-01  9.098e-02   2.122  0.03387 *
regionSE232   -3.835e-01  8.026e-02  -4.778 1.80e-06 ***
regionSE311   -2.780e-01  1.056e-01  -2.632  0.00849 **
regionSE312    8.714e-01  8.416e-02  10.354  < 2e-16 ***
regionSE313    4.099e-01  8.046e-02   5.095 3.56e-07 ***
regionSE321    1.293e-01  7.967e-02   1.623  0.10455
regionSE322    8.518e-01  9.399e-02   9.062  < 2e-16 ***
regionSE331    7.600e-02  7.713e-02   0.985  0.32448
regionSE332   -1.989e-01  8.859e-02  -2.245  0.02479 *
time_centered -8.696e-05  2.318e-04  -0.375  0.70757
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.353 on 9207 degrees of freedom
Multiple R-squared:  0.05454,   Adjusted R-squared:  0.05228
F-statistic: 24.14 on 22 and 9207 DF,  p-value: < 2.2e-16
```

```
# Model 14: agea + region + time_centered
model40 <- lm(perception_immigrants ~ agea + region + time_centered, data = swedish_da
model41 <- lm(perception_refugees ~ agea + region + time_centered, data = swedish_data
model42 <- lm(combination_value ~ agea + region + time_centered, data = swedish_data)

# Print summaries
summary(model40)
```

```
Call:
lm(formula = perception_immigrants ~ agea + region + time_centered,
    data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-1.0803 -0.6240  0.1612  0.3273  2.3350

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)    1.341e+00  2.720e-02  49.286  < 2e-16 ***
agea           5.599e-03  4.070e-04  13.756  < 2e-16 ***
regionSE121    1.413e-01  4.437e-02   3.184  0.00146 **
regionSE122    1.978e-01  4.036e-02   4.902 9.63e-07 ***
regionSE123    1.243e-02  3.181e-02   0.391  0.69607
regionSE124    1.227e-01  4.004e-02   3.064  0.00219 **
regionSE125    2.301e-02  4.415e-02   0.521  0.60233
regionSE211    9.082e-02  5.536e-02   1.640  0.10097
regionSE212   -4.254e-01  7.414e-02  -5.737 9.92e-09 ***
regionSE213   -1.318e-02  6.127e-02  -0.215  0.82964
regionSE214    6.562e-02  2.340e-02   2.804  0.00506 **
regionSE221    3.122e-01  4.297e-02   7.264 4.05e-13 ***
regionSE224    1.828e-01  2.198e-02   8.314  < 2e-16 ***
regionSE231    6.948e-02  4.227e-02   1.644  0.10020
regionSE232   -5.988e-02  3.726e-02  -1.607  0.10806
regionSE311   -2.082e-01  4.902e-02  -4.246 2.19e-05 ***
```

```
regionSE312    3.342e-01  3.907e-02   8.553  < 2e-16 ***
regionSE313    9.771e-02  3.735e-02   2.616  0.00890 **
regionSE321    4.392e-02  3.709e-02   1.184  0.23638
regionSE322    2.381e-01  4.362e-02   5.458 4.94e-08 ***
regionSE331   -8.185e-02  3.580e-02  -2.286  0.02226 *
regionSE332   -9.928e-02  4.112e-02  -2.415  0.01577 *
time_centered -1.013e-05  5.104e-05  -0.199  0.84264
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6278 on 9207 degrees of freedom
Multiple R-squared:  0.05414,   Adjusted R-squared:  0.05188
F-statistic: 23.96 on 22 and 9207 DF,  p-value: < 2.2e-16
```

```
summary(model41)
```

```
Call:
lm(formula = perception_refugees ~ agea + region + time_centered,
    data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-2.0295 -0.6328 -0.0679  0.5714  2.6118

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)    2.478e+00  4.038e-02  61.364  < 2e-16 ***
agea          -9.446e-04  6.042e-04  -1.563 0.117994
regionSE121   -1.057e-02  6.586e-02  -0.160 0.872553
regionSE122    5.383e-01  5.991e-02   8.985  < 2e-16 ***
regionSE123    3.150e-01  4.722e-02   6.671 2.68e-11 ***
regionSE124    4.947e-01  5.943e-02   8.324  < 2e-16 ***
regionSE125   -2.404e-01  6.554e-02  -3.668 0.000245 ***
regionSE211   -1.876e-01  8.218e-02  -2.283 0.022463 *
regionSE212   -2.611e-01  1.101e-01  -2.372 0.017717 *
regionSE213   -1.208e-02  9.095e-02  -0.133 0.894309
regionSE214    2.624e-01  3.474e-02   7.555 4.59e-14 ***
regionSE221    7.165e-01  6.379e-02  11.232  < 2e-16 ***
regionSE224    1.709e-01  3.263e-02   5.239 1.65e-07 ***
regionSE231    1.457e-01  6.274e-02   2.323 0.020223 *
regionSE232   -3.122e-01  5.531e-02  -5.645 1.70e-08 ***
regionSE311   -8.011e-02  7.277e-02  -1.101 0.270985
regionSE312    5.231e-01  5.800e-02   9.018  < 2e-16 ***
regionSE313    3.039e-01  5.544e-02   5.481 4.34e-08 ***
regionSE321    5.177e-02  5.506e-02   0.940 0.347110
regionSE322    6.046e-01  6.476e-02   9.337  < 2e-16 ***
regionSE331    1.656e-01  5.315e-02   3.116 0.001840 **
regionSE332   -9.080e-02  6.104e-02  -1.488 0.136877
time_centered -6.142e-05  7.576e-05  -0.811 0.417566
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Residual standard error: 0.932 on 9207 degrees of freedom
Multiple R-squared:  0.05891,   Adjusted R-squared:  0.05667
F-statistic:  26.2 on 22 and 9207 DF,  p-value: < 2.2e-16
```

```
summary(model42)
```

```
Call:
lm(formula = combination_value ~ agea + region + time_centered,
    data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-3.0024 -1.0637 -0.1036  0.8766  4.2477

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)    3.819e+00  5.853e-02  65.245  < 2e-16 ***
agea           4.654e-03  8.757e-04   5.315 1.09e-07 ***
regionSE121    1.307e-01  9.546e-02   1.369  0.17097
regionSE122    7.362e-01  8.683e-02   8.478  < 2e-16 ***
regionSE123    3.274e-01  6.844e-02   4.785 1.74e-06 ***
regionSE124    6.174e-01  8.614e-02   7.167 8.24e-13 ***
regionSE125   -2.174e-01  9.499e-02  -2.289  0.02211 *
regionSE211   -9.680e-02  1.191e-01  -0.813  0.41645
regionSE212   -6.865e-01  1.595e-01  -4.303 1.70e-05 ***
regionSE213   -2.527e-02  1.318e-01  -0.192  0.84800
regionSE214    3.281e-01  5.035e-02   6.516 7.61e-11 ***
regionSE221    1.029e+00  9.246e-02  11.126  < 2e-16 ***
regionSE224    3.537e-01  4.729e-02   7.479 8.19e-14 ***
regionSE231    2.152e-01  9.094e-02   2.367  0.01797 *
regionSE232   -3.721e-01  8.017e-02  -4.641 3.51e-06 ***
regionSE311   -2.883e-01  1.055e-01  -2.733  0.00629 **
regionSE312    8.573e-01  8.407e-02  10.197  < 2e-16 ***
regionSE313    4.016e-01  8.035e-02   4.998 5.91e-07 ***
regionSE321    9.569e-02  7.980e-02   1.199  0.23052
regionSE322    8.427e-01  9.386e-02   8.979  < 2e-16 ***
regionSE331    8.374e-02  7.703e-02   1.087  0.27701
regionSE332   -1.901e-01  8.847e-02  -2.149  0.03169 *
time_centered -7.155e-05  1.098e-04  -0.652  0.51467
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.351 on 9207 degrees of freedom
Multiple R-squared:  0.05743,   Adjusted R-squared:  0.05518
F-statistic:  25.5 on 22 and 9207 DF,  p-value: < 2.2e-16
```

```
#Reinforces original conclusions, values of R-squared are slightly lower than before.

#Try an interaction between region and age
model1_int <- lm(perception_immigrants ~ treatment + agea * region, data = swedish_dat
model2_int <- lm(perception_refugees ~ treatment + agea * region, data = swedish_data)
model3_int <- lm(combination_value ~ treatment + agea * region, data = swedish_data)
```

```
summary(model1_int)
```

```
Call:
lm(formula = perception_immigrants ~ treatment + agea * region,
    data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-1.0992 -0.6090  0.1345  0.3524  2.3204

Coefficients:
                   Estimate Std. Error t value Pr(>|t|)
(Intercept)       1.4671667  0.0535833  27.381  < 2e-16 ***
treatmentTRUE    -0.0080482  0.0159552  -0.504 0.613973
agea              0.0033405  0.0009367   3.566 0.000364 ***
regionSE121      -0.1181148  0.1746611  -0.676 0.498898
regionSE122       0.4548010  0.1474320   3.085 0.002043 **
regionSE123       0.1040722  0.1075012   0.968 0.333019
regionSE124       0.8559442  0.1514118   5.653 1.62e-08 ***
regionSE125      -0.0549201  0.1851157  -0.297 0.766718
regionSE211      -0.2290572  0.3323527  -0.689 0.490715
regionSE212      -0.6164681  0.3111321  -1.981 0.047579 *
regionSE213      -0.8753584  0.2864026  -3.056 0.002247 **
regionSE214      -0.2043158  0.0825895  -2.474 0.013384 *
regionSE221       0.1530256  0.1567607   0.976 0.329004
regionSE224      -0.0495366  0.0754026  -0.657 0.511222
regionSE231       0.0036563  0.1390939   0.026 0.979030
regionSE232      -0.5202965  0.1217074  -4.275 1.93e-05 ***
regionSE311       0.0937401  0.1717430   0.546 0.585206
regionSE312       0.5402099  0.1498925   3.604 0.000315 ***
regionSE313      -0.4448255  0.1421059  -3.130 0.001752 **
regionSE321      -0.3547885  0.1409348  -2.517 0.011840 *
regionSE322      -0.1041309  0.1530273  -0.680 0.496223
regionSE331       0.1060933  0.1283368   0.827 0.408441
regionSE332      -0.3916430  0.1249737  -3.134 0.001731 **
agea:regionSE121  0.0047450  0.0031011   1.530 0.126026
agea:regionSE122 -0.0050970  0.0027198  -1.874 0.060961 .
agea:regionSE123 -0.0019415  0.0019692  -0.986 0.324189
agea:regionSE124 -0.0136614  0.0027061  -5.048 4.54e-07 ***
agea:regionSE125  0.0015285  0.0028905   0.529 0.596964
agea:regionSE211  0.0055062  0.0054499   1.010 0.312365
agea:regionSE212  0.0032889  0.0046778   0.703 0.482023
agea:regionSE213  0.0140552  0.0044947   3.127 0.001771 **
agea:regionSE214  0.0048928  0.0014360   3.407 0.000659 ***
agea:regionSE221  0.0029123  0.0027980   1.041 0.297978
agea:regionSE224  0.0042666  0.0013262   3.217 0.001299 **
agea:regionSE231  0.0010972  0.0026117   0.420 0.674417
agea:regionSE232  0.0086717  0.0021917   3.957 7.66e-05 ***
agea:regionSE311 -0.0051980  0.0028949  -1.796 0.072597 .
agea:regionSE312 -0.0034371  0.0025167  -1.366 0.172053
agea:regionSE313  0.0096390  0.0024305   3.966 7.37e-05 ***
agea:regionSE321  0.0066791  0.0022327   2.991 0.002784 **
```

```
agea:regionSE322  0.0060971  0.0025934   2.351 0.018746 *
agea:regionSE331 -0.0036036  0.0023044  -1.564 0.117909
agea:regionSE332  0.0054336  0.0022137   2.455 0.014124 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6241 on 9187 degrees of freedom
Multiple R-squared:  0.06743,   Adjusted R-squared:  0.06316
F-statistic: 15.81 on 42 and 9187 DF,  p-value: < 2.2e-16
```

```
summary(model2_int)
```

```
Call:
lm(formula = perception_refugees ~ treatment + agea * region,
    data = swedish_data)

Residuals:
     Min       1Q   Median       3Q      Max
-2.07181 -0.61885 -0.04285  0.55319  2.76227

Coefficients:
                  Estimate Std. Error t value Pr(>|t|)
(Intercept)       2.0761311  0.0795000  26.115  < 2e-16 ***
treatmentTRUE    -0.0134040  0.0236723  -0.566 0.571249
agea              0.0065031  0.0013897   4.679 2.92e-06 ***
regionSE121       0.0752826  0.2591397   0.291 0.771433
regionSE122       1.3257366  0.2187406   6.061 1.41e-09 ***
regionSE123       1.2915978  0.1594965   8.098 6.30e-16 ***
regionSE124       1.0093777  0.2246453   4.493 7.10e-06 ***
regionSE125       1.2459532  0.2746509   4.536 5.79e-06 ***
regionSE211       0.8404259  0.4931022   1.704 0.088347 .
regionSE212      -0.3617371  0.4616177  -0.784 0.433278
regionSE213       2.2162898  0.4249273   5.216 1.87e-07 ***
regionSE214       0.3828964  0.1225357   3.125 0.001785 **
regionSE221       1.3251206  0.2325814   5.697 1.25e-08 ***
regionSE224       0.5847509  0.1118727   5.227 1.76e-07 ***
regionSE231      -0.1078177  0.2063697  -0.522 0.601370
regionSE232       0.3804195  0.1805738   2.107 0.035168 *
regionSE311       0.9905949  0.2548102   3.888 0.000102 ***
regionSE312       1.2532059  0.2223912   5.635 1.80e-08 ***
regionSE313       0.5956100  0.2108384   2.825 0.004739 **
regionSE321       0.6416820  0.2091009   3.069 0.002156 **
regionSE322       1.5220891  0.2270422   6.704 2.15e-11 ***
regionSE331       0.7487797  0.1904097   3.932 8.47e-05 ***
regionSE332       0.2673372  0.1854198   1.442 0.149394
agea:regionSE121 -0.0015110  0.0046010  -0.328 0.742610
agea:regionSE122 -0.0147545  0.0040353  -3.656 0.000257 ***
agea:regionSE123 -0.0184972  0.0029217  -6.331 2.55e-10 ***
agea:regionSE124 -0.0094078  0.0040150  -2.343 0.019141 *
agea:regionSE125 -0.0245350  0.0042885  -5.721 1.09e-08 ***
agea:regionSE211 -0.0177188  0.0080859  -2.191 0.028452 *
agea:regionSE212  0.0003936  0.0069403   0.057 0.954771
```

```
agea:regionSE213 -0.0365220  0.0066686  -5.477 4.45e-08 ***
agea:regionSE214 -0.0022351  0.0021306  -1.049 0.294175
agea:regionSE221 -0.0111562  0.0041513  -2.687 0.007215 **
agea:regionSE224 -0.0075355  0.0019677  -3.830 0.000129 ***
agea:regionSE231  0.0057713  0.0038748   1.489 0.136409
agea:regionSE232 -0.0128532  0.0032518  -3.953 7.79e-05 ***
agea:regionSE311 -0.0190337  0.0042951  -4.432 9.47e-06 ***
agea:regionSE312 -0.0129907  0.0037339  -3.479 0.000505 ***
agea:regionSE313 -0.0053754  0.0036061  -1.491 0.136084
agea:regionSE321 -0.0103566  0.0033126  -3.126 0.001775 **
agea:regionSE322 -0.0163847  0.0038478  -4.258 2.08e-05 ***
agea:regionSE331 -0.0107182  0.0034190  -3.135 0.001725 **
agea:regionSE332 -0.0064808  0.0032844  -1.973 0.048501 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.926 on 9187 degrees of freedom
Multiple R-squared:  0.07312,   Adjusted R-squared:  0.06888
F-statistic: 17.26 on 42 and 9187 DF,  p-value: < 2.2e-16
```

```
summary(model3_int)
```

```
Call:
lm(formula = combination_value ~ treatment + agea * region, data = swedish_data)

Residuals:
    Min      1Q  Median      3Q     Max
-2.9302 -1.0355 -0.0847  0.8746  4.2273

Coefficients:
                  Estimate Std. Error t value Pr(>|t|)
(Intercept)       3.543298   0.115482  30.683  < 2e-16 ***
treatmentTRUE    -0.021452   0.034386  -0.624 0.532737
agea              0.009844   0.002019   4.876 1.10e-06 ***
regionSE121      -0.042832   0.376428  -0.114 0.909410
regionSE122       1.780538   0.317744   5.604 2.16e-08 ***
regionSE123       1.395670   0.231685   6.024 1.77e-09 ***
regionSE124       1.865322   0.326321   5.716 1.12e-08 ***
regionSE125       1.191033   0.398959   2.985 0.002840 **
regionSE211       0.611369   0.716283   0.854 0.393388
regionSE212      -0.978205   0.670548  -1.459 0.144651
regionSE213       1.340931   0.617252   2.172 0.029849 *
regionSE214       0.178581   0.177996   1.003 0.315751
regionSE221       1.478146   0.337849   4.375 1.23e-05 ***
regionSE224       0.535214   0.162507   3.293 0.000993 ***
regionSE231      -0.104161   0.299774  -0.347 0.728249
regionSE232      -0.139877   0.262303  -0.533 0.593863
regionSE311       1.084335   0.370139   2.930 0.003403 **
regionSE312       1.793416   0.323047   5.552 2.91e-08 ***
regionSE313       0.150785   0.306265   0.492 0.622495
regionSE321       0.286894   0.303741   0.945 0.344922
regionSE322       1.417958   0.329803   4.299 1.73e-05 ***
```

```
regionSE331       0.854873   0.276590   3.091 0.002002 **
regionSE332      -0.124306   0.269342  -0.462 0.644439
agea:regionSE121  0.003234   0.006683   0.484 0.628483
agea:regionSE122 -0.019851   0.005862  -3.387 0.000711 ***
agea:regionSE123 -0.020439   0.004244  -4.816 1.49e-06 ***
agea:regionSE124 -0.023069   0.005832  -3.956 7.69e-05 ***
agea:regionSE125 -0.023007   0.006230  -3.693 0.000223 ***
agea:regionSE211 -0.012213   0.011746  -1.040 0.298475
agea:regionSE212  0.003683   0.010082   0.365 0.714916
agea:regionSE213 -0.022467   0.009687  -2.319 0.020400 *
agea:regionSE214  0.002658   0.003095   0.859 0.390502
agea:regionSE221 -0.008244   0.006030  -1.367 0.171630
agea:regionSE224 -0.003269   0.002858  -1.144 0.252797
agea:regionSE231  0.006868   0.005629   1.220 0.222391
agea:regionSE232 -0.004181   0.004724  -0.885 0.376054
agea:regionSE311 -0.024232   0.006239  -3.884 0.000104 ***
agea:regionSE312 -0.016428   0.005424  -3.029 0.002462 **
agea:regionSE313  0.004264   0.005238   0.814 0.415699
agea:regionSE321 -0.003677   0.004812  -0.764 0.444744
agea:regionSE322 -0.010288   0.005589  -1.841 0.065717 .
agea:regionSE331 -0.014322   0.004966  -2.884 0.003940 **
agea:regionSE332 -0.001047   0.004771  -0.219 0.826270
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.345 on 9187 degrees of freedom
Multiple R-squared:  0.06752,   Adjusted R-squared:  0.06326
F-statistic: 15.84 on 42 and 9187 DF,  p-value: < 2.2e-16
```

```r
#The results confirm that the treatment effect is consistently non-significant across

#Propoensity score matching
matchit <- matchit(treatment ~ agea + region, data = swedish_data, method = "nearest")
matched_data <- match.data(matchit)

model1_psm <- lm(perception_immigrants ~ treatment + agea + region, data = matched_dat
model2_psm <- lm(perception_refugees ~ treatment + agea + region, data = matched_data)
model3_psm <- lm(combination_value ~ treatment + agea + region, data = matched_data)

summary(model1_psm)
```

```
Call:
lm(formula = perception_immigrants ~ treatment + agea + region,
    data = matched_data)

Residuals:
    Min      1Q  Median      3Q     Max
-1.0550 -0.6381  0.1510  0.3283  2.3092

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)    1.3699501  0.0446487  30.683  < 2e-16 ***
```

```
treatmentTRUE -0.0097586  0.0203658  -0.479  0.63185
agea           0.0050087  0.0006546   7.651 2.49e-14 ***
regionSE121    0.1930167  0.0681728   2.831  0.00466 **
regionSE122    0.1363453  0.0607232   2.245  0.02480 *
regionSE123    0.0925746  0.0499201   1.854  0.06375 .
regionSE124    0.0109776  0.0658882   0.167  0.86769
regionSE125   -0.0086328  0.0677772  -0.127  0.89865
regionSE211    0.0640675  0.0852338   0.752  0.45230
regionSE212   -0.5546316  0.1183818  -4.685 2.89e-06 ***
regionSE213    0.0195872  0.0911202   0.215  0.82981
regionSE214    0.1234969  0.0362746   3.405  0.00067 ***
regionSE221    0.2985798  0.0664065   4.496 7.12e-06 ***
regionSE224    0.1933117  0.0339151   5.700 1.29e-08 ***
regionSE231    0.0674126  0.0670207   1.006  0.31455
regionSE232    0.0042249  0.0598922   0.071  0.94377
regionSE311   -0.3180971  0.0747098  -4.258 2.11e-05 ***
regionSE312    0.3344820  0.0595475   5.617 2.08e-08 ***
regionSE313    0.0788020  0.0587741   1.341  0.18008
regionSE321    0.0720173  0.0565632   1.273  0.20302
regionSE322    0.2846202  0.0708723   4.016 6.03e-05 ***
regionSE331   -0.0807380  0.0567631  -1.422  0.15500
regionSE332   -0.1364856  0.0658666  -2.072  0.03832 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6354 on 3871 degrees of freedom
Multiple R-squared:  0.0562,    Adjusted R-squared:  0.05083
F-statistic: 10.48 on 22 and 3871 DF,  p-value: < 2.2e-16
```

```
summary(model2_psm)
```

```
Call:
lm(formula = perception_refugees ~ treatment + agea + region,
    data = matched_data)

Residuals:
     Min       1Q   Median       3Q      Max
-1.98883 -0.61967 -0.02715  0.55954  2.60825

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)    2.568543   0.065207  39.391  < 2e-16 ***
treatmentTRUE -0.011299   0.029743  -0.380 0.704041
agea          -0.002018   0.000956  -2.111 0.034837 *
regionSE121    0.008566   0.099563   0.086 0.931444
regionSE122    0.512314   0.088683   5.777 8.21e-09 ***
regionSE123    0.379099   0.072906   5.200 2.10e-07 ***
regionSE124    0.487465   0.096226   5.066 4.26e-07 ***
regionSE125   -0.342520   0.098985  -3.460 0.000545 ***
regionSE211   -0.206991   0.124479  -1.663 0.096423 .
regionSE212   -0.366123   0.172890  -2.118 0.034267 *
regionSE213    0.022607   0.133076   0.170 0.865116
```

```
regionSE214    0.276499   0.052977   5.219 1.89e-07 ***
regionSE221    0.684001   0.096983   7.053 2.07e-12 ***
regionSE224    0.106557   0.049531   2.151 0.031513 *
regionSE231    0.190376   0.097880   1.945 0.051849 .
regionSE232   -0.391625   0.087469  -4.477 7.78e-06 ***
regionSE311   -0.165795   0.109110  -1.520 0.128712
regionSE312    0.513390   0.086966   5.903 3.87e-09 ***
regionSE313    0.308185   0.085836   3.590 0.000334 ***
regionSE321   -0.022338   0.082608  -0.270 0.786859
regionSE322    0.515904   0.103505   4.984 6.49e-07 ***
regionSE331    0.098828   0.082899   1.192 0.233276
regionSE332   -0.227117   0.096195  -2.361 0.018274 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.928 on 3871 degrees of freedom
Multiple R-squared:  0.06853,   Adjusted R-squared:  0.06324
F-statistic: 12.95 on 22 and 3871 DF,  p-value: < 2.2e-16
```

```
summary(model3_psm)
```

```
Call:
lm(formula = combination_value ~ treatment + agea + region, data = matched_data)

Residuals:
    Min      1Q  Median      3Q     Max
-2.9808 -1.0894 -0.0993  0.8604  4.2636

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)    3.938494   0.095097  41.416  < 2e-16 ***
treatmentTRUE -0.021058   0.043377  -0.485 0.627373
agea           0.002991   0.001394   2.145 0.032022 *
regionSE121    0.201582   0.145200   1.388 0.165124
regionSE122    0.648660   0.129334   5.015 5.53e-07 ***
regionSE123    0.471673   0.106324   4.436 9.41e-06 ***
regionSE124    0.498443   0.140335   3.552 0.000387 ***
regionSE125   -0.351153   0.144358  -2.433 0.015039 *
regionSE211   -0.142923   0.181538  -0.787 0.431161
regionSE212   -0.920754   0.252140  -3.652 0.000264 ***
regionSE213    0.042194   0.194076   0.217 0.827901
regionSE214    0.399996   0.077261   5.177 2.37e-07 ***
regionSE221    0.982581   0.141438   6.947 4.36e-12 ***
regionSE224    0.299869   0.072235   4.151 3.38e-05 ***
regionSE231    0.257788   0.142747   1.806 0.071009 .
regionSE232   -0.387400   0.127564  -3.037 0.002406 **
regionSE311   -0.483892   0.159124  -3.041 0.002374 **
regionSE312    0.847872   0.126830   6.685 2.64e-11 ***
regionSE313    0.386987   0.125182   3.091 0.002006 **
regionSE321    0.049679   0.120473   0.412 0.680092
regionSE322    0.800525   0.150950   5.303 1.20e-07 ***
regionSE331    0.018090   0.120899   0.150 0.881062
```

```
regionSE332    -0.363603    0.140288  -2.592 0.009583 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.353 on 3871 degrees of freedom
Multiple R-squared:  0.06215,   Adjusted R-squared:  0.05682
F-statistic: 11.66 on 22 and 3871 DF,  p-value: < 2.2e-16
```

```r
#The treatment effect remains non-significant, and the slight improvements in model fi

#Rerunning the test
t.test(perception_immigrants ~ treatment, data = matched_data)
```

```
    Welch Two Sample t-test

data:  perception_immigrants by treatment
t = 0.46678, df = 3891.6, p-value = 0.6407
alternative hypothesis: true difference in means between group FALSE and group TRUE is
not equal to 0
95 percent confidence interval:
 -0.03122951  0.05074671
sample estimates:
mean in group FALSE  mean in group TRUE
           1.733436            1.723677
```

```r
t.test(perception_refugees ~ treatment, data = matched_data)
```

```
    Welch Two Sample t-test

data:  perception_refugees by treatment
t = 0.36765, df = 3892, p-value = 0.7132
alternative hypothesis: true difference in means between group FALSE and group TRUE is
not equal to 0
95 percent confidence interval:
 -0.04895714  0.07155601
sample estimates:
mean in group FALSE  mean in group TRUE
           2.588084            2.576785
```

```r
#Models confirm that the treatment does not have a significant impact on public percep
```

Falsification tests: placebo tests using pre-event data

This chunks output is in the thesis PDF.

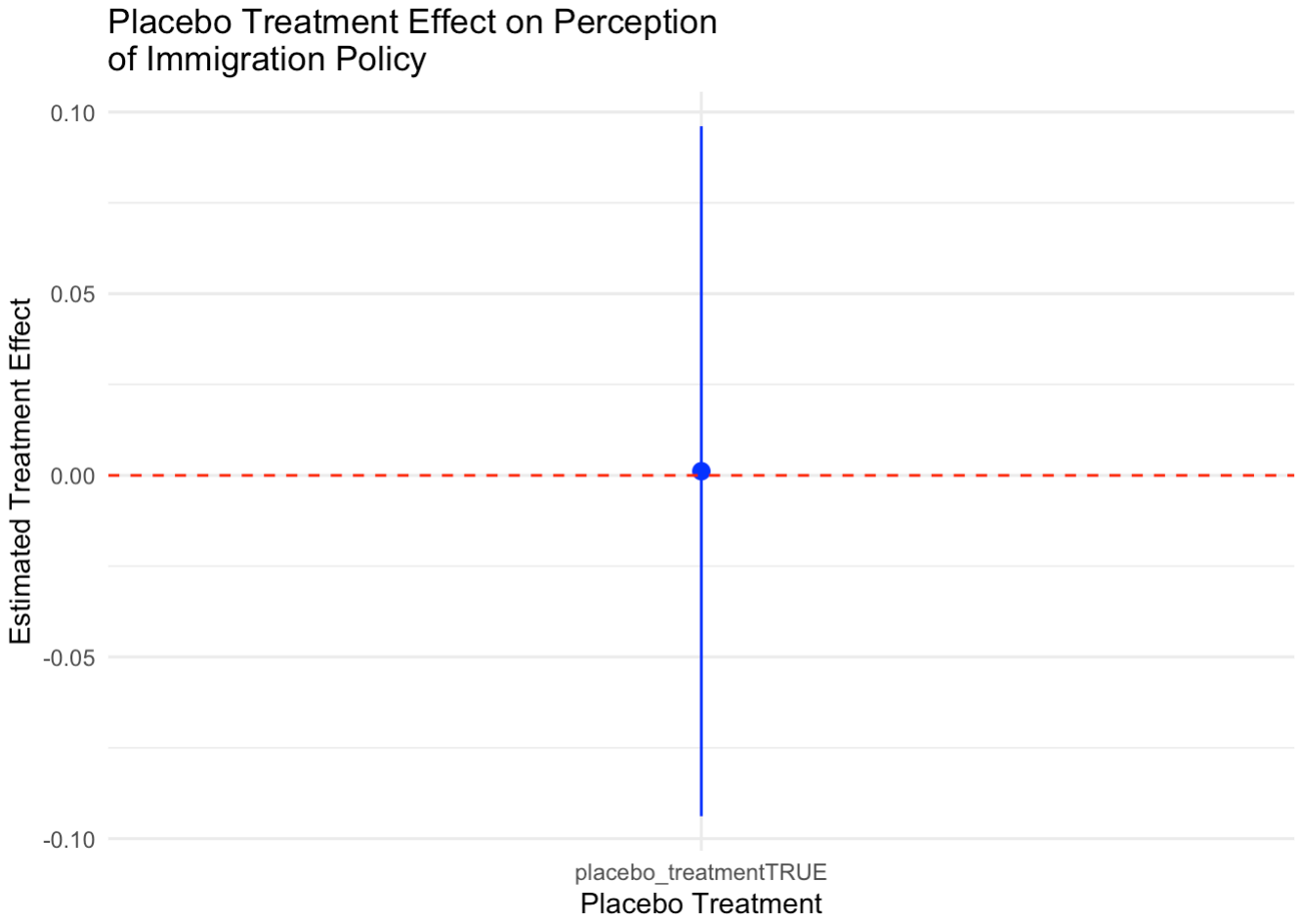
```r
#Perception of immigration
placebo_data <- swedish_data %>% filter(time_centered < 0)
placebo_data <- placebo_data %>%
  mutate(placebo_treatment = ifelse(time_centered >= -20, TRUE, FALSE))
```

```
placebo_model1 <- lm(perception_immigrants ~ placebo_treatment + agea + region + time_
summary(placebo_model1)
```

```
Call:
lm(formula = perception_immigrants ~ placebo_treatment + agea + 
    region + time_centered, data = placebo_data)

Residuals:
    Min      1Q  Median      3Q     Max 
-1.0944 -0.6155  0.1572  0.3327  2.3428 

Coefficients:
                       Estimate Std. Error t value Pr(>|t|)    
(Intercept)           1.348e+00  3.414e-02  39.498  < 2e-16 ***
placebo_treatmentTRUE 1.139e-03  4.844e-02   0.024  0.98123    
agea                  5.745e-03  4.573e-04  12.562  < 2e-16 ***
regionSE121           1.315e-01  5.007e-02   2.627  0.00864 ** 
regionSE122           2.054e-01  4.582e-02   4.482 7.49e-06 ***
regionSE123          -8.330e-03  3.569e-02  -0.233  0.81547    
regionSE124           1.462e-01  4.442e-02   3.290  0.00101 ** 
regionSE125           3.145e-02  4.984e-02   0.631  0.52804    
regionSE211           9.627e-02  6.246e-02   1.541  0.12330    
regionSE212          -3.945e-01  8.282e-02  -4.763 1.94e-06 ***
regionSE213          -1.281e-02  6.980e-02  -0.184  0.85441    
regionSE214           5.232e-02  2.635e-02   1.986  0.04712 *  
regionSE221           3.151e-01  4.843e-02   6.507 8.19e-11 ***
regionSE224           1.800e-01  2.478e-02   7.266 4.09e-13 ***
regionSE231           7.153e-02  4.731e-02   1.512  0.13062    
regionSE232          -7.117e-02  4.157e-02  -1.712  0.08692 .  
regionSE311          -1.779e-01  5.544e-02  -3.209  0.00134 ** 
regionSE312           3.332e-01  4.419e-02   7.540 5.28e-14 ***
regionSE313           1.028e-01  4.189e-02   2.454  0.01414 *  
regionSE321           3.508e-02  4.196e-02   0.836  0.40317    
regionSE322           2.267e-01  4.855e-02   4.669 3.08e-06 ***
regionSE331          -8.207e-02  4.007e-02  -2.048  0.04056 *  
regionSE332          -9.355e-02  4.590e-02  -2.038  0.04159 *  
time_centered         8.557e-05  1.451e-04   0.590  0.55543    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6269 on 7259 degrees of freedom
Multiple R-squared:  0.05468,   Adjusted R-squared:  0.05168 
F-statistic: 18.26 on 23 and 7259 DF,  p-value: < 2.2e-16
```

```
#This non-significant result is expected and desirable in a placebo test, as it sugges

#Visuzalize results
# Tidy the placebo model to extract coefficients and confidence intervals
placebo_model1_tidy <- tidy(placebo_model1, conf.int = TRUE)

# Filter to only include the placebo treatment effect
```

```
placebo_model1_treatment <- placebo_model1_tidy %>% filter(term == "placebo_treatmentT
# Plot the placebo treatment effect with confidence intervals
placebo_plot <- ggplot(placebo_model1_treatment, aes(x = term, y = estimate, ymin = co
  geom_pointrange(color = "blue") +
  geom_hline(yintercept = 0, linetype = "dashed", color = "red") +  # Null effect line
  labs(title = "Placebo Treatment Effect on Perception\nof Immigration Policy",
       x = "Placebo Treatment",
       y = "Estimated Treatment Effect") +
  theme_minimal()

# Print the plot
print(placebo_plot)
```

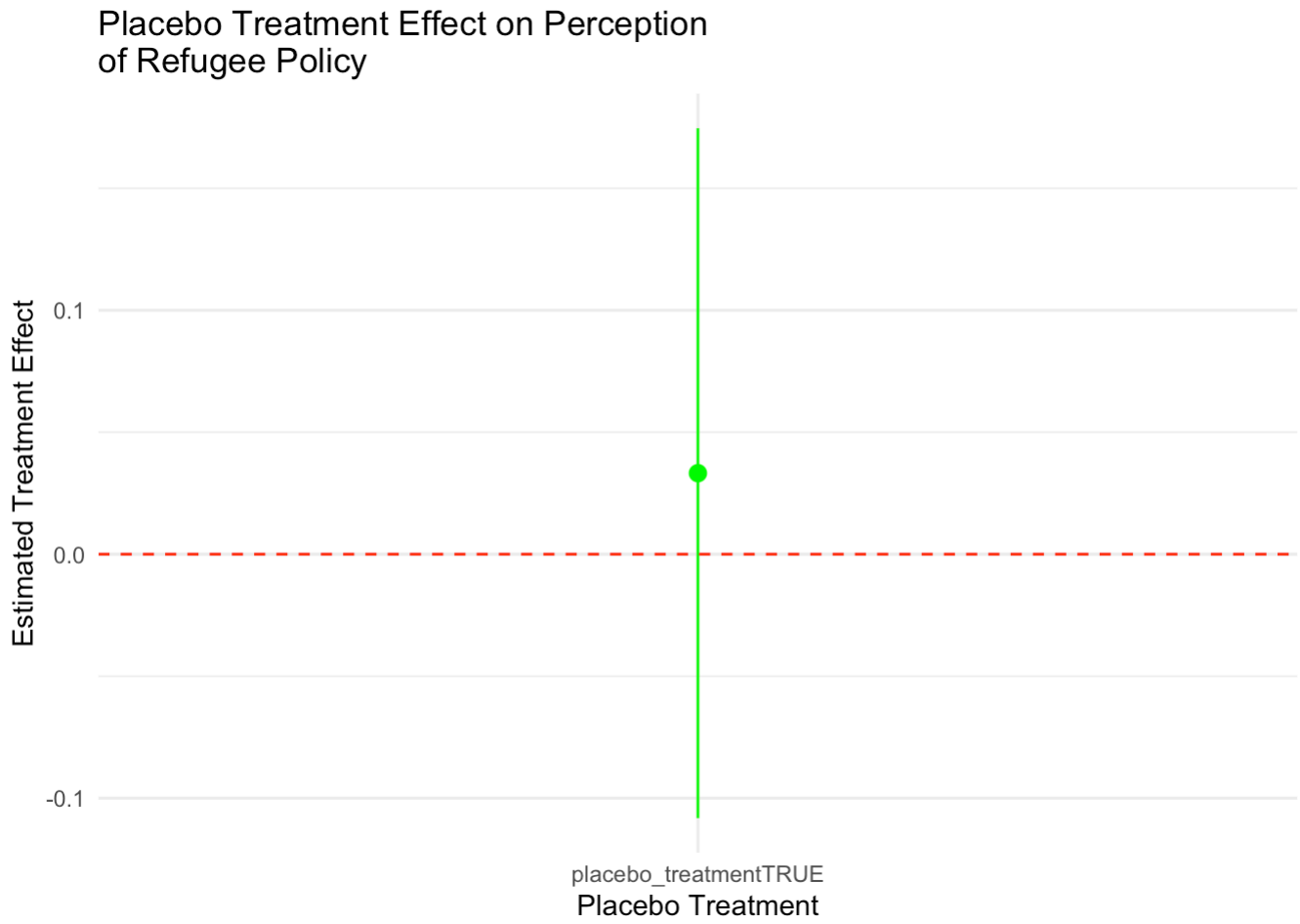



```
# Perception of refugees
placebo_model2 <- lm(perception_refugees ~ placebo_treatment + agea + region + time_ce
summary(placebo_model2)
```

```
Call:
lm(formula = perception_refugees ~ placebo_treatment + agea +
    region + time_centered, data = placebo_data)

Residuals:
     Min       1Q   Median       3Q      Max
-2.04872 -0.66266 -0.06187  0.57407  2.64360

Coefficients:
```

```
                         Estimate Std. Error t value Pr(>|t|)
(Intercept)             2.4564677  0.0508414  48.316  < 2e-16 ***
placebo_treatmentTRUE   0.0332113  0.0721359   0.460  0.64524
agea                   -0.0007332  0.0006811  -1.077  0.28172
regionSE121            -0.0183866  0.0745611  -0.247  0.80523
regionSE122             0.5352032  0.0682280   7.844 4.98e-15 ***
regionSE123             0.2888370  0.0531521   5.434 5.68e-08 ***
regionSE124             0.4959058  0.0661547   7.496 7.35e-14 ***
regionSE125            -0.2195632  0.0742200  -2.958  0.00310 **
regionSE211            -0.1884896  0.0930136  -2.026  0.04275 *
regionSE212            -0.2400208  0.1233414  -1.946  0.05169 .
regionSE213            -0.0529183  0.1039397  -0.509  0.61068
regionSE214             0.2615897  0.0392408   6.666 2.82e-11 ***
regionSE221             0.7200203  0.0721177   9.984  < 2e-16 ***
regionSE224             0.1819391  0.0369029   4.930 8.40e-07 ***
regionSE231             0.1346173  0.0704572   1.911  0.05609 .
regionSE232            -0.2935772  0.0619032  -4.743 2.15e-06 ***
regionSE311            -0.0597963  0.0825670  -0.724  0.46896
regionSE312             0.5210309  0.0658134   7.917 2.80e-15 ***
regionSE313             0.2875557  0.0623825   4.610 4.10e-06 ***
regionSE321             0.0684820  0.0624840   1.096  0.27312
regionSE322             0.6222989  0.0722976   8.607  < 2e-16 ***
regionSE331             0.1859795  0.0596684   3.117  0.00183 **
regionSE332            -0.0615564  0.0683590  -0.900  0.36789
time_centered          -0.0001004  0.0002161  -0.464  0.64234
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9336 on 7259 degrees of freedom
Multiple R-squared:  0.05696,   Adjusted R-squared:  0.05397
F-statistic: 19.06 on 23 and 7259 DF,  p-value: < 2.2e-16
```

```r
# Tidy the placebo model to extract coefficients and confidence intervals
placebo_model2_tidy <- tidy(placebo_model2, conf.int = TRUE)

# Filter to only include the placebo treatment effect
placebo_model2_treatment <- placebo_model2_tidy %>% filter(term == "placebo_treatmentT

# Plot the placebo treatment effect with confidence intervals
placebo_plot2 <- ggplot(placebo_model2_treatment, aes(x = term, y = estimate, ymin = c
  geom_pointrange(color = "green") +
  geom_hline(yintercept = 0, linetype = "dashed", color = "red") +  # Null effect line
  labs(title = "Placebo Treatment Effect on Perception\nof Refugee Policy",
       x = "Placebo Treatment",
       y = "Estimated Treatment Effect") +
  theme_minimal()

# Print the plot
print(placebo_plot2)
```

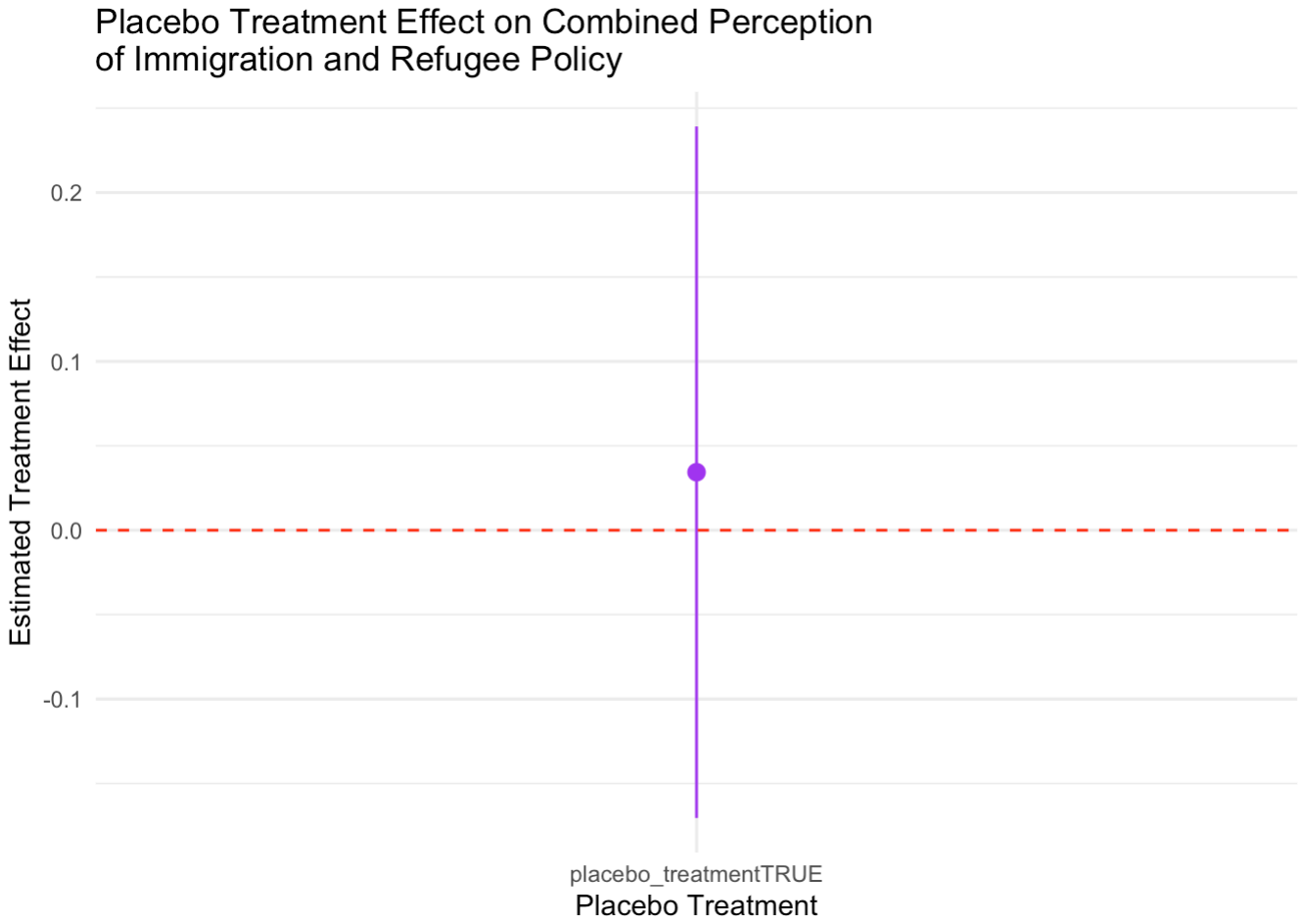



```
# Combined perception of immigrants and refugees
placebo_model3 <- lm(combination_value ~ placebo_treatment + agea + region + time_cent
summary(placebo_model3)
```

```
Call:
lm(formula = combination_value ~ placebo_treatment + agea + region +
    time_centered, data = placebo_data)

Residuals:
    Min      1Q  Median      3Q     Max
-3.0079 -1.0614 -0.1061  0.8787  4.2130

Coefficients:
                       Estimate Std. Error t value Pr(>|t|)
(Intercept)           3.8049254  0.0736325  51.675  < 2e-16 ***
placebo_treatmentTRUE 0.0343507  0.1044729   0.329 0.742316
agea                  0.0050120  0.0009864   5.081 3.84e-07 ***
regionSE121           0.1131315  0.1079852   1.048 0.294831
regionSE122           0.7405673  0.0988131   7.495 7.44e-14 ***
regionSE123           0.2805069  0.0769791   3.644 0.000270 ***
regionSE124           0.6420584  0.0958105   6.701 2.22e-11 ***
regionSE125          -0.1881134  0.1074911  -1.750 0.080154 .
regionSE211          -0.0922244  0.1347096  -0.685 0.493608
regionSE212          -0.6345132  0.1786327  -3.552 0.000385 ***
regionSE213          -0.0657260  0.1505336  -0.437 0.662400
regionSE214           0.3139108  0.0568315   5.524 3.44e-08 ***
```

```
regionSE221             1.0351279  0.1044464   9.911  < 2e-16 ***
regionSE224             0.3619889  0.0534457   6.773 1.36e-11 ***
regionSE231             0.2061462  0.1020417   2.020 0.043398 *
regionSE232            -0.3647456  0.0896531  -4.068 4.78e-05 ***
regionSE311            -0.2376928  0.1195800  -1.988 0.046879 *
regionSE312             0.8542400  0.0953162   8.962  < 2e-16 ***
regionSE313             0.3903633  0.0903472   4.321 1.58e-05 ***
regionSE321             0.1035599  0.0904943   1.144 0.252504
regionSE322             0.8489775  0.1047071   8.108 5.99e-16 ***
regionSE331             0.1039075  0.0864164   1.202 0.229246
regionSE332            -0.1551045  0.0990028  -1.567 0.117236
time_centered          -0.0000148  0.0003130  -0.047 0.962285
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.352 on 7259 degrees of freedom
Multiple R-squared:  0.05652,   Adjusted R-squared:  0.05353
F-statistic: 18.91 on 23 and 7259 DF,  p-value: < 2.2e-16
```

```r
# Tidy the placebo model to extract coefficients and confidence intervals
placebo_model3_tidy <- tidy(placebo_model3, conf.int = TRUE)

# Filter to only include the placebo treatment effect
placebo_model3_treatment <- placebo_model3_tidy %>% filter(term == "placebo_treatmentT

# Plot the placebo treatment effect with confidence intervals
placebo_plot3 <- ggplot(placebo_model3_treatment, aes(x = term, y = estimate, ymin = c
  geom_pointrange(color = "purple") +
  geom_hline(yintercept = 0, linetype = "dashed", color = "red") +  # Null effect line
  labs(title = "Placebo Treatment Effect on Combined Perception\nof Immigration and Re
       x = "Placebo Treatment",
       y = "Estimated Treatment Effect") +
  theme_minimal()

# Print the plot
print(placebo_plot3)
```


Placebo Treatment Effect on Combined Perception of Immigration and Refugee Policy
Estimated Treatment Effect
0.2
0.1
0.0
-0.1
placebo_treatmentTRUE
Placebo Treatment